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# **SIEVERS' LAW AND THE EVIDENCE OF THE RIGVEDA**

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# SIEVERS' LAW AND THE EVIDENCE OF THE RIGVEDA

*by*

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*To my parents  
for their patience  
and to Rochelle  
for her impatience.*



## PREFACE

It was during the course of a seminar conducted at Columbia University by Professor William Diver in the Fall of 1957 that I raised a question in class concerning some apparent exceptions to Sievers' law. I expected a simple answer; it no more occurred to me than it did to many leading Indo-Europeanists of the time that Edgerton's formulation of Sievers' law was open to re-examination. Professor Diver felt differently, and urged me to look into the matter without prejudging the outcome. It was not long before I could see that Professor Diver's suspicions were amply confirmed, and that a thoroughgoing reassessment of the question was overdue.

Unfortunately, this reassessment was to remain overdue for some time, as other responsibilities and interests drew me away from my research on the subject for extended periods. Throughout this time, I have been able to rely on Professor Diver's encouragement and guidance, and especially on the gift he possesses of offering criticism which invariably penetrates to the heart of a question. These few sentences can hardly begin to express my gratitude to him now that he has seen the work which he inspired through to its conclusion, first as a dissertation submitted at Columbia in 1971 under his sponsorship, and now, in slightly revised form, as the present monograph.

It was my good fortune during the Fall of 1957 to be studying Avestan with Professor Wolfgang Lentz, who was a visiting professor at Columbia that year. I discussed my research with him while it was still in its early stages, and the direction it took was in great measure due to his influence.

I wish likewise to express my special appreciation for their encouragement and advice to Professors John Lotz and Robert Austerlitz, and to acknowledge the debt of gratitude I owe the late Professor Uriel Weinreich.

This study also profited from the suggestions of the members of my doctoral examining committee, which included, in addition to Professors Diver and Austerlitz, Professors Gerd Gropp, Joseph L. Malone, and Alex Wayman. Others who gave me valuable advice, either in conversation or correspondence, were Professors Warren Cowgill, Louis G. Heller, Henry M. Hoenigswald, Paul Thieme, Royal Weiler, and the late Professor Franklin Edgerton. I must also thank Andrew Sihler, to whom I was referred by Professor Cowgill, for sending me a copy of his dissertation.

The A.V. Williams Jackson Fellowship in Indo-Iranian Languages and Literature, which I held during the years 1957-1958 and 1958-1959, was of great assistance in



enabling me to pursue the research upon which this study is based. I am also grateful to the Research Council of Rutgers University for the grant of a subvention toward the cost of the present publication.

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## HISTORY OF THE PROBLEM

1.1.1. The term 'Sievers' law' will be used in this study to refer to any one of a number of suggested formulations of the assumed distribution in Proto-Indo-European or in early stages of later Indo-European dialects of syllabic and non-syllabic reflexes of the IE resonants ( $y, w, r, l, m, n$ , especially the first two) when immediately preceded by a consonant (or non-syllabic resonant) and immediately followed by a vowel (or syllabic resonant).<sup>1</sup> All of these formulations are parallel at least in that they include as a conditioning factor in this distribution the nature of the preceding syllable.

As a result of the work of Franklin Edgerton, Sievers' law as just described has come to be regarded as part of a larger pattern involving the distribution of the reflexes of IE resonants in all environments, and the terms 'Sievers' law in Edgerton's formulation'<sup>2</sup> and 'Sievers-Edgerton's law'<sup>3</sup> have been used with this extended reference. In this study I shall restrict my consideration of Sievers' law to its more limited application.

1.1.2. The history of research on Sievers' law may be divided into three periods: (1) the period of initial formulation by Eduard Sievers, Heinrich Hübschmann, and Hermann Osthoff; (2) the period of consolidation of evidence, culminating in the summary presented by Hermann Hirt in his *Indogermanische Grammatik*; (3) the

<sup>1</sup> The terms CONSONANT and VOWEL will appear in this discussion in both a limited and an extended sense. CONSONANT strictly refers to any phoneme which is always non-syllabic, VOWEL to any phoneme which is always syllabic. However, where no misunderstanding seems likely, it will be useful, in order both to eliminate cumbersome repetition and to avoid possible distortion of earlier statements on the subject, to include non-syllabic resonants within the range of application of the term CONSONANT and syllabic resonants similarly within the range of VOWEL. In this latter sense, therefore, the adjectives VOCALIC and CONSONANTAL may at times be used as equivalent to SYLLABIC and NON-SYLLABIC respectively. Where there is no ambiguity,  $y, w, r, l, m, n$ , will represent the non-syllabic value of the resonants, and  $i, u, r, l, m, n$  the syllabic value. Non-syllabic  $y$  and  $w$  may also appear as  $j$  and  $u$  respectively whenever the latter signs are used in the work under discussion.

More than one set of terms will likewise be used to refer to syllabic quantity; in this context the terms HEAVY and LIGHT will frequently appear in place of LONG and SHORT respectively.

<sup>2</sup> E.g. W.P. Lehmann, "The Proto-Indo-European Resonants in Germanic", *Language*, 31 (1955), p. 355.

<sup>3</sup> E.g. P.W. Brosman, "Proto-Indo-Hittite  $\bar{r}$  and the Allophones of Laryngeals", *Language*, 33 (1957), p. 4.

recent period, dominated by the work of Jerzy Kuryłowicz and Franklin Edgerton. It is the contention of this monograph that a re-examination of the entire question is called for, and therefore a more thorough account of each period is presented below than would be required in a study which could build on a more secure foundation.

1.2.1. The classic statement of the law appeared in 1878 in Sievers' article "Zur Accent- und Lautlehre der germanischen Sprachen".<sup>4</sup> The subject arose in connection with Sievers' consideration of the problem of Gothic *ja*-stem masculine nouns, some with genitive in *-jis* and others in *-eis* (i.e. *-īs*), e.g. *harjis*/*hairdeis*. Sievers regarded the distinction as one involving the presence in the suffix of consonantal *j* and vocalic *i* respectively. In opposition to other scholars, he maintained that this alternation was not dependent upon place of accent, but was rather a function of the length of the preceding syllable.<sup>5</sup> He was convinced, furthermore, that evidence from other IE languages showed that this phenomenon had its roots in the parent language.

It is at this point in the discussion that Sievers<sup>6</sup> states his law on the basis of material in Vedic Sanskrit: unaccented *i* or *u* (i.e. without an accompanying svarita accent) before a vowel is consonantal after a short syllable and vocalic after a long one without regard to position of accent in the word, with the aforementioned exception. He then lists contrasting Vedic forms with similar accentuation but which differ in that one ends in short syllable plus *ya* and the other in long syllable plus *ia* (e.g. *ajuryá*: *asūria*; *avya*; *mártia*).<sup>7</sup>

Immediately following this, Sievers mentions certain exceptions. Included are suffixes beginning in a consonant, such as *-bhyas*, *-bhyām*, *-tva*. These, as well as words beginning in consonant plus *y*, *v* in general, according to Sievers, are used indiscriminately after long syllables, though after short syllables they appear only with consonantal *y*, *v*. Furthermore, certain adjectives, especially verbal adjectives, end in a disyllabic suffix *-ia* even when a short syllable precedes: *gádhia*, *gúhia*, *gopayátia*, etc. On the other hand the suffix of the so-called *ya*-class of verbs, or of the passive, seems to follow the rule.

Mention is made of the fact that Hübschmann had found independent evidence (to be published the following year) for the same process in Old Iranian. There was the testimony of three language groups, therefore, namely Indic, Iranian, and

<sup>4</sup> *Beiträge zur Geschichte der deutschen Sprache und Literatur (PBB)* 5 (1878), pp. 63-163.

<sup>5</sup> This correlation had already been noted, as Sievers acknowledged, in Vilhelm Thomsen's discussion of Gmc. loan-words in Finnish and Lappish; cf. Thomsen, *Über den Einfluss der germanischen Sprachen auf die Finnisch-lappischen*, aus dem Dänischen übersetzt von E. Sievers (Halle, 1870), especially pp. 76-77 and 92-95.

<sup>6</sup> "Zur Accent- und Lautlehre", p. 129.

<sup>7</sup> It should be noted that the reading *-ia* in these words is not based on extant Vedic manuscripts or recitation tradition, but on reconstruction of the text in terms of assumed metrical patterns. The question of the metrical basis for reconstruction of the text of the Rigveda will be discussed in Chapter 3 below.

Germanic, pointing to the antiquity of the phenomenon. Sievers felt that the alternation described in his law had been leveled out at an early period in the other IE languages, but nevertheless was confident that traces of the original state would be discovered in these languages upon further research. He considered it significant, for example, that there was a parallel between the opposition of Greek adjectives like *hágios* to verbs like *házomai* < *\*hágymai* and the similar opposition of Sanskrit verbal adjectives<sup>8</sup> to the corresponding verbs.

Sievers interpreted the operation of the law as a kind of vowel-weakening or syncope. The assumed derivational suffixes *-ia*, *-ua*, for example, retained their weight after a preceding long syllable, and so remained disyllabic, but were reduced to monosyllabic status after a short syllable. This process reflected a more general tendency for vowels to be weakened and syncopated more readily after short than after long syllables, and was linked up by Sievers with vowel-syncope in Nordic, which he had described earlier in the paper as subject to similar conditions.<sup>9</sup>

Through this expanded form of the law, Sievers felt he could account for the contrast of Germanic weak verbs like OE *þeccan* and those like *sēcan* from Proto-Gmc. *\*þakjan*, *\*sōkian*.<sup>10</sup> These show a very similar alternation to that of *harjis/ hairdeis* (cf. Goth. 2 sg. *nasjis/sōkeis*), although the verbal suffixes are traced back to *\*-ejan*, *\*-ijan* and therefore originally differed from the *-ja/-ia* of the nominal suffix. Sievers regarded the verbal suffixes as having come under the law at a very early period in Germanic; they split into *-jan/-ijan*, *-ian* under the same conditions as the nominal suffix, and so the verbal and nominal forms followed the same course of development.<sup>11</sup>

#### 1.2.2. Hübschmann's Iranian material referred to by Sievers appeared in 1879.<sup>12</sup>

<sup>8</sup> Sievers continued to maintain that verbal adjectives of this type were exceptions to his law in his paper of 1894, "Über germanische Nominalbildungen auf *-aja-*, *-ēja-*"; see *Berichte über die Verhandlungen der kgl. sächsischen Gesellschaft der Wissenschaften zu Leipzig, Philologisch-historische Classe* 46, p. 136.

A recent attempt at accounting for the discrepancy between the Greek adjectives and verbs in terms of different accentual patterns was made by Gregory Nagy, *Greek Dialects and the Transformation of an Indo-European Process* (Cambridge, Mass., 1970), p. 104ff.

<sup>9</sup> West Germanic syncope, on the other hand, which proceeded along quite contrary lines, was regarded by Sievers as a later development.

<sup>10</sup> These same verbs were re-examined recently by Lehmann ("The Proto-Indo-European Resonants", *Language*, 31 (1955), pp. 355-366), who considered them examples of the 'converse of Sievers' law', and evidence of the retention in PGmc. of the PIE resonant pattern. A different interpretation, in terms of an analogical extension in Gmc. of a morphophonemic alternation surviving after the breakdown of the PIE phonological pattern, is offered by James W. Marchand, "The 'Converse of Sievers' Law' and the Germanic First-Class Weak Verbs", *Language*, 32 (1956), pp. 285-287. Marchand's explanation parallels that of Wilhelm Streitberg, *Urgermanische Grammatik* (Heidelberg, 1896), p. 306.

<sup>11</sup> Sievers was troubled by the failure of *i*-stem nouns like Goth. nom. pl. *naweis* (*-eis* < *\*ijz* < *\*ejez*) and imperatives like Goth. *nasei* (*-ei* < *\*iji* < *\*eje*) to show similar syncope, and diffidently suggested the possibility that the original number of syllables (*nasei* and *naweis* with three syllables, but *nasjis* with four) was a conditioning factor.

<sup>12</sup> "Iranische Studien", *Zeitschrift für vergleichende Sprachforschung auf dem Gebiete der indo-*

Before adducing the Avestan and Old Persian evidence confirming Sievers' law, he makes it clear that the rule cannot be considered firmly established until the considerable body of exceptions in the Veda, and to a greater extent in the Avesta, has been accounted for.

The Iranian evidence is of two kinds. The first kind consists of Avestan examples, similar to those for Sanskrit, where vocalic *i*, *u* or consonantal *y*, *v* are assumed as values of orthographic *y*, *v* on the basis of metrical patterns posited for the text (e.g. *aur-va-θa*, *duš-main-yu* but *bā-zu-a*, *zaoθrā-bi-o*). In addition to this there is a second type of evidence for which Sanskrit offers no parallel. Because of the special Iranian treatment of many consonant clusters, it is often possible to tell where orthographic *y* and *v* were originally syllabic in function and where they were non-syllabic and therefore entered into consonant clusters. For example, Av. *fy*, *θy* are reflexes of earlier *\*py*, *\*ty*, where *y* was consonantal (cf. *ərəzifya*: Skt. *ṛjipyā*; *haiθya*: Skt. *satya*). If, on the other hand, we find *p* or *t* before *y* in the orthography, we may assume that the segment represented by *y* originally was (and, as the meter shows, continued to be) vocalic (e.g. *dāitya*, to be pronounced *dāitia*). Similarly *θw* developed from *\*tv* with consonantal *v* (e.g. *θwam*: Skt. *tvām*), while the writing *tv* implies that the *v* represents an originally vocalic segment, viz. *u* (e.g. *tvām*: Skt. *tvam*). Old Persian offers similar cases.

On the basis of many striking parallels in the distribution of syllabic and non-syllabic values of the palatal and labial semivowels in cognate forms in Avestan, Old Persian, and Sanskrit, Hübschmann considered it clearly established that this distribution was of Proto-Indo-Iranian origin, but he left it to further research to determine if it reached back as far as PIE, although he cited briefly the Gothic and the more equivocal Greek evidence.

1.2.3. In the same year there appeared a brief treatment by Osthoff<sup>13</sup> of the kind of variation subsumed under Sievers' law, apparently developed independently and from a different angle, with evidence from various IE languages. Syllabic/non-syllabic alternation before vowel was considered for all six IE resonants, and was thought of in terms of syllable division rather than length of preceding syllable. If the combination of consonant plus resonant in zero grade could be divided in such a way that the first member of the group went with the preceding syllable and the resonant with the second, as might be the case in medial position, then the resonant was non-syllabic. When this was not possible, as in initial position, the resonant retained its syllabicity (cf. Skt. *guru-s* < *\*ggru-s*, but *a-gru-s*). However, we may find a non-syllabic resonant as the second member of a consonant cluster even at the beginning of a word, if that word is closely connected with a preceding word ending in a vowel; for example, Osthoff posited PIE *\*g<sup>2</sup>ṛnās* 'mulieris', but *\*ésti g<sup>2</sup>nās* 'est mulieris'.

*germanischen Sprachen* (KZ), 24 (1879), 362-367.

<sup>13</sup> Hermann Osthoff, *Morphologische Untersuchungen auf dem Gebiete der indogermanischen Sprachen*, Part II (Leipzig, 1879), pp. 14-16, footnote 1.

Deviations from this pattern in the attested languages are the result of later generalization of one or another variant.

1.2.4. Two years later Osthoff considered this problem once more,<sup>14</sup> this time as part of a more general system of IE vocalism. On the basis of his analysis<sup>15</sup> of IE accentuation into three grades, primary (*hochtonig*), secondary (*nebentonig*), and unaccented (*tonlos*), he developed a unitary theory of the resonants, including the putative long syllabic resonants (*i̯*, *ū*, etc.), as follows: what appears in primary grade as *eī*, *oī*, *aī*, etc. shows up in secondary grade, by assimilation of the vocalic element, as *iī* (and by parallel development *uū*, *rr*, *nn*, etc.). Before a vowel this sequence of syllabic plus homorganic non-syllabic semivowel, liquid, or nasal remains, but before a consonant it contracts into a long syllabic resonant, *i̯*, *ū*, etc. When the syllable in question, because of its syntagmatic position, loses its accent completely, there is a reduction of *iī* to (vocalic) *i̯* before consonant, and to (consonantal) *i̯* before vowel, the loss of one mora being effected in either case.<sup>16</sup> Therefore the variation described in Sievers' law (which Osthoff now refers to by that name) between syllabic and non-syllabic *i* and *u* before vowel would be interpreted as secondarily accented *iī* and *uū*, and unaccented *i̯* and *ū̯* respectively. Osthoff insisted on the non-syllabic glide between the syllabic resonant and a dissimilar vowel (*iīa*, *uūa*, etc.), and in marshalling evidence in support of the necessary existence of such a glide he introduced another important example of the operation of Sievers' law: the distinction, preserved in Classical Sanskrit and clearly indicated in the orthography, between fifth-class verbs like *aś-nuv-anti*, with *uv* before a vowel preceded by a heavy syllable, and corresponding forms like *śr-ṇv-anti*, with *v* preceded by a light syllable.

1.2.5. Osthoff found it necessary to return to the question of Sievers' law once more, this time for a comprehensive treatment, in an inquiry into the history of the perfect in IE.<sup>17</sup> Adopting his earlier approach in terms of syllable division in preference, for the most part, to his more ambitious accentual theory, he attempts here to apply Sievers' law to the problem of the development of the linking vowel between the perfect stem and personal endings found, for example, in Skt. *-imá*, Gk. *-amen*, Goth. *-um*, Lat. *-imus*. He begins<sup>18</sup> with the observations of Delbrück<sup>19</sup> and Whitney<sup>20</sup>

<sup>14</sup> *Morphologische Untersuchungen*, Part IV (Leipzig, 1881), esp. pp. 397ff.

<sup>15</sup> Adapted from that of Paul, *PBB*, 6, pp. 130ff.

<sup>16</sup> Osthoff rejected, *Morphologische Untersuchungen*, p. 279, the Saussurean (later to be called 'laryngeal') analysis of long resonants because of the frequent co-occurrence of evidence for both a long and a short resonant in the same root (e.g. *-to-* participle in *ū* in Skt. *śrutás*, Gk. *klūtós*, etc., but in *ū* in Avestan *srūtō*, OE *hlūd*, etc.).

<sup>17</sup> Hermann Osthoff, *Zur Geschichte des Perfects im Indogermanischen mit besonderer Rücksicht auf Griechisch und Lateinisch* (Strassburg, 1884), esp. pp. 43-44, 391-476.

<sup>18</sup> Osthoff, *Zur Geschichte des Perfects*, p. 391.

<sup>19</sup> Berthold Delbrück, *Das altindische Verbum aus den Hymnen des Rigveda seinem Baue nach dargestellt* (Halle, 1874), § 147.

<sup>20</sup> William Dwight Whitney, *Sanskrit Grammar* (Leipzig, 1879), § 798.



that in Vedic Skt. the perfect endings are added directly to the stem when the latter ends in a short syllable, but the linking vowel *i* occurs between a long stem-syllable and the endings (e.g. *uvócitha* : *vivyáktha*; *ūcimá* : *yuyujma*; *ūciśé* : *dadṛkśé*; *tataksiré* : *tatasré*). Osthoff regards the presence of the linking vowel before *-tha* as a later extension, the earlier situation being attested in the form *véttha*. In the other forms, however, the linking vowel is an anaptyctic sound arising out of the resonant or sibilant when preceded by the final consonant of the stem in syllable-initial position; so *paptiré* < *\*pep/ṭrāi*; *ūciśé* < *\*ū/k²asāi*. In the first person pl. *-ima* has replaced an earlier *\*-amá* < *\*-ṛmá*, just as we find first dual *-iva* for *\*-uva* and *-ivāñs-* in the perfect active participle for *\*-uvāñs-*.

Osthoff then embarks on a lengthy digression in which he marshals additional evidence parallel to that concerning the perfect endings, and soon loses sight of the perfect altogether in his concern with Sievers' law as such.

He finds confirmation of Sievers' law in a variety of examples, particularly noteworthy being the following:

(1) The Greek present-stem suffix in *-ano-*, invariably following a long syllable (e.g. *lambánō*, *punthánomai*, *aisthánomai*, *hamartánō*), in contrast to *-no-* after a short syllable (e.g. *dáknō*, *kámnō*).<sup>21</sup>

(2) The contrasting treatment of Gk. forms like *téktaina* < *\*ték/tṇja* and *pótnia* < *\*pót/nija*, parallel to the contrast in Gothic between such forms as *glitmunjan* and *namnjan*.<sup>22</sup>

He is equally concerned, however, with the mass of material which does not conform to Sievers' law. Much of this he feels is the result of analogical generalization; in particular, he maintains that when we find *ī*, *u*, *r*, etc. after a short syllable in place of the expected simple consonant *i*, *u*, *r*, etc., the exceptions can in general easily be explained as later innovations (so, for example, Greek *glúkiōn* after *hēdiōn*).<sup>23</sup> But much remains that he cannot conscientiously dismiss in this way, and so he is compelled to formulate two major modifications of the law.

(1) Forms like Skt. *mr-iyá-te*, *kr-iyá-te* are explained as generalizations of augmented forms such as *\*é-m/riṇeto*, etc.,<sup>24</sup> where the initial consonant of the root was included in the preceding syllable, and the two following resonants appeared in their non-syllabic and syllabic variants respectively. How then can one account for the treatment of resonants in forms like Skt. *cakṛvān* or in *\*k²etur-óm* (gen. pl.), which Osthoff reconstructs as the etymon underlying the stems Skt., Av. *catur-*, Lith. *ketur-* 'four'? Here, Osthoff concludes, the position of the accent was the determining

<sup>21</sup> Hermann Osthoff, *Zur Geschichte des Perfects*, pp. 404-406.

<sup>22</sup> Hermann Osthoff, *Zur Geschichte des Perfects*, pp. 452-453. Recalcitrant Gk. forms like *therá-paina*, *onomainō* are regarded as analogical innovations. The different treatments of the cluster *-mn-* in Goth. verbal forms like *namnjan* : *glitmunjan*, as well as in nominal forms like *laihmuni* : *fraistubni*, *wundufni* < *\*-umni*, had already been noted by Brugmann, *Morphologische Untersuchungen*, 2 (1879), p. 209.

<sup>23</sup> Hermann Osthoff, *Zur Geschichte des Perfects*, pp. 437-439.

<sup>24</sup> Hermann Osthoff, *Zur Geschichte des Perfects*, pp. 434ff.

factor: the syllabification was *\*k<sup>2</sup>e/turóm* because the secondary accent of the initial syllable was not strong enough, as was the primary accent of the augment, to include the consonant following the vowel in close juncture (*enger silbischer Anschluss*).

(2) Of much greater significance are the cases of non-syllabic resonant after a long syllable. Some of these had already been alluded to by Sievers (see Par. 1.2.1. above), and Osthoff presents many more.<sup>25</sup> To cite only one out of a multitude of examples, the future in *\*-sīd* appears once in the Rigveda with *-iy-* after a long syllable, but eight times with *-y-* under the same apparent conditions; parallel forms in Baltic and Slavic likewise regularly show an original monosyllabic suffix after a long syllable.<sup>26</sup> Osthoff is therefore forced to the conclusion that after a long syllable both treatments of the resonants (*-i-* or *-ī-*, etc.) were possible, the conditions for each remaining to be determined.

1.2.6. The first few years of research on Sievers' law, we have seen, witnessed not only a rapid accretion of supporting evidence and an increasingly broad formulation, but a concomitant concern on the part of those engaged in the pioneering work with the body of material which would not submit readily to a simple statement of conditioning factors.<sup>27</sup>

This period also witnessed a damaging attack on one of the central pillars on which the whole structure had been raised: the Vedic evidence. In 1888 Hermann Oldenberg directed his attention to Sievers' law in a footnote inserted unobtrusively within the fourth chapter of his monumental study of Rigvedic meter and textual history.<sup>28</sup> The context is a discussion of the occurrence of contraction and of hiatus in sequences of *ca* plus following word-initial vowel in the Rigveda (N.B. a problem with no direct connection to Sievers' law). Oldenberg points out, as an alternative to an unconvincing attempt by Benfey to find semantic correlates for the different treatments, that *ca* is usually contracted with a following short syllable and is usually uncontracted when the following syllable is long; this distribution, in turn, can be easily accounted for when we note that in most positions in the line the normal Vedic metrical types permit a sequence of two short syllables only exceptionally, whereas the alternation of long and short is favored. It is at this point that Oldenberg notes that the same metrical patterns ought to be taken into consideration in the case of Sievers' law alternations in the RV. As an explanation of why *śarmaṇi syām*, *tava syām* and not *śarmaṇi siām*, *tava siām* occur, it is sufficient to point out that strings of three short syllables are very unusual, whereas the trochees of *śarmaṇi syām* offer

<sup>25</sup> Hermann Osthoff, *Zur Geschichte des Perfects*, pp. 440-474.

<sup>26</sup> Hermann Osthoff, *Zur Geschichte des Perfects*, p. 470.

<sup>27</sup> A similar concern is reflected in Brugmann's hedging statement on the subject (*Grundriss der vergleichenden Grammatik der indogermanischen Sprachen*<sup>2</sup>, vol. I [Strassburg, 1897], § 282, p. 264): "In Binnensilben mag ursprünglich *i* nach kurzer Silbe, *ij* nach langer, besonders nach gewissen Consonantengruppen wie *tr*, *kū* Regel gewesen sein."

<sup>28</sup> Hermann Oldenberg, *Die Hymnen des Rigveda, Band I: Metrische und textgeschichtliche Prolegomena* (Berlin, 1888), p. 442, footnote 2.

a neat ending to a *triṣṭubh* line. On the other hand, since Vedic meter permits in many positions not only alternations of long and short but also sequences of long syllables, we find both *patiḥ syām* and *gopatiḥ siām*, both *tarantaḥ syāma* and *nṛvantaḥ siāma*.

1.2.7. Oldenberg's objections did not receive the careful consideration they deserved. In Brugmann's *Grundriss*,<sup>29</sup> to cite but one example, we find the Vedic distribution of monosyllabic and disyllabic readings of the stem *tya-* in terms of the length of the preceding syllable, a distribution in some ways similar to that of *syām/siām*, presented as confirmation of Sievers' law, without the qualification that it may be simply a metrical phenomenon.<sup>30</sup>

It should be noted, however, that Sievers himself, in a later work, preferred to seek a metrical rather than a phonological solution to a problem involving syllabic/non-syllabic alternation in the RV. In his paper "Zum vedischen Sandhi"<sup>31</sup> he undertakes, on the basis of an examination of the first six books of the RV, to give the conditions under which final *i* or *u* of disyllabic prefixes (*āti, ādhi, ānu, āpi, pāri, prāti, abhi*) remain syllabic before a following vowel, and the conditions under which they become *y* or *v* respectively. The rules are complex, related to position in the line, including place of caesura, but in general it can be said that in the middle of the line *i, u* remain syllabic when a long syllable FOLLOWS (N.B.!), but change to *y, v* before a short syllable, especially before a sequence  $\cup \text{ —}$ . Sievers states explicitly, "Überblickt man diese Belege, so ergibt sich leicht ein metrisch-rhythmisches Princip für die verschiedene Behandlung der Präfixauslaute."<sup>32</sup>

1.3.1. The succeeding period is characterized by more intensive study of old as well as new evidence, and in the course of this study one theme becomes especially prominent: that the phenomena covered by Sievers' law are describable in terms of rhythmic patterns which do not entirely coincide from language to language.

We see this change of focus from the *ursprachlich* to the *einzel sprachlich* in W. van Helten,<sup>33</sup> who applies the approach of Osthoff, that of describing Sievers' law variations in terms of syllable division and accentuation, to specifically Germanic conditions. In analyzing the Gothic *harjis/haírdeis* opposition and similar forms, van Helten assumed that *ji* remained when not preceded by a consonant in the same syllable, while it was 'contracted' to *ei* (= *i*) otherwise. His proposed syllabification may be summarized in these formulas:

<sup>29</sup> Brugmann, *Grundriss*, § 282, p. 265.

<sup>30</sup> Edgerton at a much later date characterized Oldenberg as "a stubborn opponent of Sievers' law", with no attempt at an evaluation of the reasons for Oldenberg's opposition ("The Indo-European Semivowels", *Language*, 19 (1943), p. 89. In Edgerton's case, to be sure, an awareness of Oldenberg's objections is indicated by a reference in *Language*, 10 (1934), pp. 246-247, but here too Edgerton seemed to feel no obligation to respond to them directly.

<sup>31</sup> In *Festgruss an Rudolf von Roth* (Stuttgart, 1893), pp. 203-207.

<sup>32</sup> Sievers, "Zum vedischen Sandhi", p. 205.

<sup>33</sup> In "Zur Geschichte der -jo- und -io- Stämme im Germanischen", *PBB*, 16 (1892), p. 282, fn. 1.

(*V* = vowel, *C* = consonant, ' = Gmc. primary accent, ` = weak accent  
 [Tiefton])  
 $\check{V}C/j$  (har/jis, sat/jip)  
 $\check{V}/C+j$  (sōkeip < \*sō/kjip)  
 $VC/C+j$  (haírdeis < \*haír/djis)  
 $\check{V}/C+j$  (ragineis < \*ragi/njis)<sup>34</sup>

The fact that syllable length alone, which seemed to be adequate in accounting for Sievers' Sanskrit examples, is not sufficient for Gothic is seen in forms like *ragineis* < \**raginjis*, which pattern with *haírdeis* rather than *harjis*, despite the short syllable before the *j*.

1.3.2. This analysis was adapted by Ferdinand Sommer to important new evidence which he adduced from Baltic.<sup>35</sup> Here there is a division between noun stems in 'uncontracted' -*ja* or -*ia*, and those in 'contracted' -*ē*. After vowels or diphthongs, including the Lithuanian diphthongs in short vowel + liquid or nasal, the uncontracted forms appear almost without exception (e.g. *kója*, *sáuja*, *gírja*). In other cases the contracted forms seem to be characteristic, although the situation is less clear, since uncontracted forms are also found (e.g. *didē*, *eilē*, but also *eilia*, *kaliē*, also *kalczià*).<sup>36</sup> Sommer derived the uncontracted -*ja*, -*ia* from \*-*iā* with non-syllabic *i*, while the contracted -*ē* was from \*-*iā* with syllabic *i*. He assumed that originally non-syllabic *i* appeared only in syllable-initial position, syllabic *i* otherwise. Unlike Germanic, in Baltic even a single consonant after a short vowel was read with the following syllable (e.g. *didē* < \**di/diā*), except for liquids and nasals fused with the preceding short vowel in a diphthong (e.g. *gírja* < \**gir/iā*). Even with short vowel + liquid or nasal the contracted inflection is followed in words of more than two syllables (e.g. *giminē* < \**gimi/niā* as against *žinià* < \**žin/iā*). The case of *giminē* parallels Gothic *ragineis*, but since the strong initial accent assumed to be responsible for the Germanic patterning cannot also be posited for Baltic, Sommer speaks of a stress attached to the beginning of each articulatory unit, independent of the place of the Baltic pitch-accent, and characteristic of speech in general. Therefore the syllable preceding the ending is more strongly stressed in *žinià* than in *giminē*.

Although Sommer accepted Sievers' law as descriptive of a phenomenon reaching back to PIE, the lack of congruence in the operation of the law in Indic, Germanic

<sup>34</sup> Confirmation of this syllabification is provided, according to Alois Walde, *Die germanischen Auslautgesetze* (Halle, 1900), pp. 157-158, by the Gothic treatment of original *u* between syllables, where after a long vowel as well as after an unaccented short vowel we find *w* (*snaiws*, *lasiws*), but *u* after an accented short vowel (*þius*), indicating that *u* originally belonged with the preceding syllable in the latter case but with the following (before syncope) in the former.

<sup>35</sup> "Die indogermanischen *iā*- und *io*- Stämme im Baltischen", *Abhandlungen der philologisch-historischen Klasse der königl. sächsischen Gesellschaft der Wissenschaften*, 30, 4 (Leipzig, 1914).

<sup>36</sup> Gregory Nagy, in the second chapter of *Greek Dialects and the Transformation of an Indo-European Process*, p. 49ff., presents the distribution of contracted and uncontracted forms as conditioned largely by morphological rather than phonological factors.

and Baltic made it clear to him that wherever the law was active it adjusted to the syllable division of each individual language.

1.3.3. The fact that he had himself discovered a significant body of new material which tended to support Sievers' law did not blur Sommer's sense of objectivity in evaluating the attempts which had been made to find evidence for the operation of the law in still another language, Latin.

In his *Handbuch*<sup>37</sup> he is inclined to accept the possibility (noted by Jakob Wackernagel)<sup>38</sup> of an opposition in Old Latin between *lārŭa*, *mīlŭos* and *solŭō*, *ŷolŷō* on the basis of the length of the preceding syllable, although he is cautious because of lack of evidence. In the case of the Latin primary verbs in *-iō*, however, where some, usually with long root syllable, belong to the fourth conjugation (e.g. *sāgiō*, *sāgīs*; *farcīō*, *farcīs*), while others, generally short roots, belong to the third (e.g. *capiō*, *capīs*; *jaciō*, *jacīs*), Sommer cannot subscribe to the tempting but controversial view that here too Sievers' law is at work.<sup>39</sup>

The question of the origin of the Latin primary third and fourth conjugation verbs in *-iō* has been so hotly contested, and its implications for our understanding of Sievers' law are so ambiguous, and yet, as will be indicated in Chapter 4 below, so suggestive, that it seems appropriate at this point to trace the history of the problem, even though this does not fit neatly into the chronological framework adopted for the rest of this chapter.

1.3.3.1. Only a year after the original statement of Sievers' law had appeared in print, Rudolf Thurneysen, in his doctoral dissertation,<sup>40</sup> recognized the possibility of applying it to the Latin verbs. In view of the fact that all *-iō* verbs in short *ī* have short stem syllables, might we not reconstruct the suffix in *jacīs* as *\*je > ī*, in contrast to *\*ie > ī* in *farcīs*, and regard the difference in treatment as parallel to that in Goth. *nasjis/sōkeis*? His answer to the question was negative, a major reason being the contrary evidence of verbs with stems ending in a short syllable followed by long *ī*, such as *vēnīre*, *sālīre*, etc.

1.3.3.2. Some years later, the theory that Thurneysen had rejected was given new life by Erich Berneker and carried to a higher level of sophistication by Antoine Meillet and Max Niedermann.

As Berneker saw it,<sup>41</sup> there was a direct parallel between the Gothic *sōkeis/hafjis*

<sup>37</sup> *Handbuch der lateinischen Laut- und Formenlehre* (Heidelberg, 1914<sup>2,3</sup>), § 85, p. 131.

<sup>38</sup> *Altindische Grammatik*, vol. 1 (Lautlehre), (Göttingen, 1896), § 183.

<sup>39</sup> *Handbuch*, § 320, pp. 503ff.

<sup>40</sup> *Über Herkunft und Bildung der lateinischen Verba auf -io der dritten und vierten Conjugation und über ihr gegenseitiges Verhältniss* (Leipzig, 1879).

<sup>41</sup> "Zur Präsensflexion der lateinischen primären *io*-Verba", *Indogermanische Forschungen (IF)*, 8 (1898), pp. 197-199. Berneker had already expressed his views several years earlier, and these are incorporated, with proper acknowledgement, by Wilhelm Streitberg in his *Urgermanische Grammatik* (Heidelberg, 1896), § 206, pp. 300-301. Streitberg and Berneker also credit P. Giles with having reached similar conclusions independently, although in the second revised edition of *A Short Manual of Comparative Philology for Classical Students* (London, 1901<sup>2</sup>), Giles merely states the basic

contrast and that of Latin *sāgīs/capīs*, and that the conditioning factor was the length of the root-syllable was borne out by the overwhelming majority of verbs, despite the exceptions, which amounted to only 10 against 45 (*vēnīre*, *sālīre*, *sārīre*, *fērtīre*, *rūgīre*, *mūgīre*, *sepēlīre*, *amīcīre*, *repēlīre* and related forms, *apēlīre* and related forms).<sup>42</sup> He then set out to explain the exceptions, some in phonological terms, others by analogical leveling. Thus, *salīre* and *sarīre* could be traced to forms in long syllabic resonants; *rugīre* and *mugīre* followed the pattern of other onomatopoeic verbs referring to animal cries (e.g. *hinnīre*); *venīre* was influenced by the semantically similar *īre*.

1.3.3.3. Meillet, who dealt in depth with this group of verbs in several studies,<sup>43</sup> detected in the apparent exceptions a pattern which Berneker had missed. Meillet was particularly struck by the contrast between *jaciō*, *jacēre* and its compound *amiciō*, *amicīre*, where we find the suffix *-ī-* rather than *-ī-* after two short syllables, just as we do in Gothic *mikileid*, *riqizeip*.<sup>44</sup> A parallel case is found in *parere* beside *reperire*, *comperire*, although, to be sure, *parere* itself seems to depart from another pattern which Meillet noticed, one in which *-ī-* is normal after a single short root-syllable ending in a stop, but *-ī-* is common after a short syllable ending in a resonant.

1.3.3.4. Niedermann's treatment of the problem<sup>45</sup> agreed in the main with that of Meillet, but was more ambitious; he attempted to establish for Latin a complex set of rhythmic patterns inherited from PIE. The preferred sequences were  $\cup \cup$  (*capīs*, *cupīs*),  $— \cup \cup$  (*conspicīs*, *porricīs*),  $— —$  (*audīs*, *dormīs*), and  $\cup \cup —$  (*amicīs*, *aperīs*), while  $\cup \cup \cup$  was rigorously proscribed. The antiquity of these patterns was assured, he felt, by the congruence of the Gothic forms and by a rhythmic law of Greek and Sanskrit (the discovery of which he credited to Saussure and Meillet) according to which sequences of three short syllables were avoided.<sup>46</sup>

correlation that Thurneysen had already noted and refers to Berneker for a more detailed treatment.

<sup>42</sup> It should be noted that this list is not definitive; as was subsequently pointed out, in some of the less commonly attested of these ten verbs the quantity of the root-syllable is not certain, and other verbal forms are attested which also deviate from the pattern.

<sup>43</sup> Primarily "Sur les suffixes verbaux secondaires en indo-européen", *Mémoires de la Société de Linguistique de Paris (MSL)*, 11 (1900), pp. 297-323, and *Les dialectes indo-européens, Collection linguistique publiée par la Société de Linguistique de Paris*, I (Paris, 1908), Chapter 16, "Le suffixe de présent \*-ye-".

<sup>44</sup> "Sur les suffixes verbaux", *MSL*, 11 (1900), p. 322. Compounds like *abicere*, *inicere*, etc. were subjected to the influence of the simplex, but because of its semantic specialization and the mutilation of its prefix *amicire* escaped this.

<sup>45</sup> "Une loi rythmique proethnique en latin", *Mélanges de linguistique offerts à M. Ferdinand de Saussure, Collection linguistique publiée par la Société de Linguistique de Paris*, II (Paris, 1908), pp. 43-57.

<sup>46</sup> Ferdinand de Saussure, "Une loi rythmique de la langue grecque", *Mélanges Graux* (Paris, 1884), pp. 737-748; Antoine Meillet, p. 294 of "De la partie commune des Pâdas de 11 et de 12 syllabes dans le Maṇḍala III du Rgveda", *Journal Asiatique*, series 9, vol. 10 (1897), pp. 266-300. Niedermann's association of the two is misleading, since their purposes, methods, and conclusions are different. Saussure's goal is to reconstruct one characteristic rhythmic feature of an early stage of Greek, and being cognizant of the inconclusive nature of evidence in this regard drawn from metrical

In order to explain the frequent co-occurrence of long *-i-* and an immediately preceding resonant, Niedermann had recourse to recent findings in experimental phonetics. Just as it had been demonstrated for Modern English that vowels are of longer duration before voiced consonants, so in Latin the root-syllable of a verb like *saliō* was intermediate in length between those of *capiō* and *sōpiō*, and therefore in such a verb *-i-*, the form of the suffix appropriate to long root-syllables, occurred in competition with *-ī-*, and tended to replace it.<sup>47</sup> The third-conjugation forms of *moriō* and *oriō* could be explained away by pointing out that since these deponent verbs are one syllable longer in many forms than comparable active verbs, the lengthening effect of the root-final resonant was counter-balanced by the fact that the length of a vowel varies inversely with the length of the chain of sounds to which it belongs.<sup>48</sup>

1.3.3.5. It should be noted that the conditioning factors posited by Meillet and Niedermann for the development of *-ī-* and *-i-* in the Latin *-iō* verbs do not coincide with those contained in Sievers' original statement, first of all, because Latin, like Gothic and Lithuanian, requires that more than the immediately preceding syllable be taken into account; secondly, because Latin, unlike Gothic and in direct opposition to Lithuanian, shows a distinction between short syllables ending in obstruent and those ending in resonant, with the latter behaving like long syllables; and finally, for the still more significant reason that, while Sievers' law in its classic form deals with prevocalic alternations, the Latin material may not involve prevocalic position at all. As Streitberg<sup>49</sup> and Meillet<sup>50</sup> make clear, the contrast between the endings of *capiō* and *sāgiō* on the one hand and *capis*, *capit* and *sāgis*, *sāgit* on the other seems to reflect an alternation between thematic and athematic forms of the suffix *-yo/-ī-*, an alternation also found in West Germanic, Celtic, and Albanian.<sup>51</sup>

texts, he concentrates on vestiges of this feature preserved in prose. Meillet, on the other hand, is concerned with examining the metrical techniques of the Rigvedic poets, and insofar as one of his observations, namely that a sequence of two short syllables in one word sometimes has the value of a trochee, might bring to mind the Homeric treatment of three short syllables within a word as a dactyl, he is at pains to emphasize the essential difference between these two phenomena.

<sup>47</sup> As Graur ("La quatrième conjugaison latine", *BSL*, 40, 1939, p. 127) points out, writing in 1939 from the vantage-point of the newly-won insights of that decade in phonological theory, this explanation would imply that the opposition of length was neutralized in this position, which was not the case.

<sup>48</sup> Experimental phonetics unfortunately would not account for *pariō*, *parere*, and so a more traditional appeal to analogy had to suffice (*cecedit:cadere* = *cecini:canere* = *pepuli:pellere* = *peperi:x*).

<sup>49</sup> Wilhelm Streitberg, "Die Abstufung der Nominalsuffixe *-io-* und *-ien-* im Germanischen und ihr Verhältnis zu der des indogerm.", *PBB*, 14 (1889), pp. 165-231, especially "Excurs: *-i-* in der Verbalflexion", pp. 224-231.

<sup>50</sup> Antoine Meillet, *Les dialectes indo-européens*, Collection linguistique publiée par la Société de Linguistique de Paris, I (Paris, 1908), Chapter 16, "Le suffixe de présent *\*-ye*", pp. 109-113; also "Sur la flexion du suffixe indo-européen de présent *\*ye/o-* en albanais", *Mémoires de la Société de Linguistique de Paris*, 19 (1914-1916), pp. 119-121.

<sup>51</sup> Nagy, *Greek dialects*, p. 20ff., maintains that the assumption of a semithematic conjugation is not called for by the evidence, since a development of *ye > i* can be postulated for each of the languages involved. A disadvantage of Nagy's view is that it requires minimizing the significance of the

1.3.3.6. The attempt to relate the Latin *-iō* verbs to IE rhythmic patterns more or less reminiscent of Sievers' law encountered another problem, a kind of embarrassment of riches. A purely *einzel sprachlich* phenomenon, well documented for Latin, could account for the data equally well; this was the 'Law of Iambic Shortening', or 'Breves Breviantes', under which the second syllable of an iambic sequence was shortened if immediately preceded or followed by the accent. Franz Skutsch<sup>52</sup> (a pioneer in the formulation of this principle) and Charles Exon<sup>53</sup> approached the *-iō*- verbs from this perspective, and it was this approach that Ferdinand Sommer adopted, after rejecting, as noted above (§ 1.3.3), the Sievers' law explanation.

In Sommer's presentation<sup>54</sup> *\*kapjes* > *\*kapijes*<sup>55</sup> in accordance with the regular vocalization of *i* after consonant in Latin (e.g. *medius* < *\*medhjos*), then, with syncope of the *e*, > *\*kapis*, parallel to *sāgis*; *\*kapis* then underwent iambic shortening, but *sāgis*, not being iambic, remained. The place of the accent hindered shortening in *amicis*, *réperis*, *sépelis*, as well as in compound forms like *ádenis*, which exerted an analogical influence on the simplex. Analogy also produced *capimus*, *capitis*, etc., which should have remained *\*capimus*, *\*capitis*, etc. because of the accent, but traces of the regular forms are found in early Latin, e.g. *morimur*, *cupiret*.

1.3.3.7. A generation later an incisive critique of the rival theories was offered by A. Graur,<sup>56</sup> who attacked the question of *-iō* verbs from a radically different point of view. If, instead of focusing on isolated forms (like the second person singular present indicative active), we survey entire paradigms (including derivatives from verbal stems), and if, instead of treating archaisms like *porricere* and innovations like *reperire* on the same historical plane, we consider each verb in terms of its chronological place within the whole course of evolution of the categories concerned from early Latin to Romance, then what we find is a continuous tendency for third-conjugation *-iō* verbs to be attracted to the fourth-conjugation pattern (*-ire*, *-ivi*, *-itum*) in some or all of their forms. This pattern, according to Graur, was developed within Italic for denominative verbs built upon *i*-stems on the model of first-conjugation *a*-stem denominatives; thus *finiō*, *finire*, *finiui*, *finitum* is exactly parallel to *plantō*, *plantāre*, *plantāui*, *plantātum*, since the first-conjugational pattern which had been established for denominatives drawn from *a*-stems (e.g. *planta*) was duplicated in the fourth-conjugational pattern into which *i*-stems like *finis* were fit. Then the

parallel alternations in Latin *ferō/fers*, *edō/ēs*, which Nagy describes as merely the vestiges of an early *e*-syncope (p. 31, footnote 81).

<sup>52</sup> "Die *-io*- Präsens", pp. 210-213, in "Grammatisch-lexikalische Notizen", *Archiv für lateinische Lexikographie und Grammatik*, 12 (1902), pp. 197-214; also "Literaturbericht für das Jahr 1908: Italische Sprachen und lateinische Grammatik", *Glotta*, 2 (1910), pp. 367-369, in which Niedermann's paper is reviewed.

<sup>53</sup> "Latin Verbs in *-io* with Infinitives in *-ere*", *Hermathena*, 11 (1901), pp. 382-402.

<sup>54</sup> *Handbuch*, p. 506.

<sup>55</sup> Both Sommer and Exon assume a fully thematic conjugation for these verbs; Skutsch is non-committal.

<sup>56</sup> "La quatrième conjugaison latine", *Bulletin de la Société de Linguistique de Paris*, 40 (1939), pp. 127-150.



fourth conjugation, because of its regularity, tended more and more to impose itself upon the inherited third-conjugation *-iō* verbs. Some of the latter resisted this analogical leveling longer than others, but the category of third-conjugation *-iō* verbs as a whole came more and more to be eliminated.

Graur acknowledges that among the factors determining the extent to which a verb resisted being drawn into the orbit of the fourth conjugation, considerations of rhythm may have played a role, but insists that this remains to be shown. He thus, albeit hesitantly, leaves the door open for a possible reconciliation of the divergent approaches to this problem, a possibility which will be considered further in Chapter 4 below.<sup>57</sup>

1.3.4. If during the period under consideration there was discernable in studies relating to Sievers' law a tendency to concentrate on that which was peculiar to the individual attested IE languages, this was counterbalanced by an ongoing attempt, initiated by Hermann Osthoff (see § 1.2.4 above) and carried forward by Hermann Hirt<sup>58</sup> and Hermann Güntert,<sup>59</sup> to integrate Sievers' law within a broader formulation of PIE ablaut patterns. The two currents converge in the second volume of Hirt's *Indogermanische Grammatik*,<sup>60</sup> where the evidence for Sievers' law phenomena in the various IE languages which had been accumulated over the preceding two generations is summarized in the context of a general theory of IE vocalism. Central to this theory is the assumption of an ablaut grade intermediate between the full and the zero grades, involving the retention under certain conditions of a reduced vowel (parallel to Güntert's *schwa secundum*), the postulation of which may account both for an otherwise atypical set of vowel correspondences in the attested languages and for the syllabic/non-syllabic alternations of resonants involved in Sievers' law; thus, in place of reconstructed sequences like *iĵ*, *uĵ*, *rĵ*, etc., Hirt insisted that we speak of sequences of reduced vowel and non-syllabic resonant.

Although Güntert<sup>61</sup> tended to emphasize the impossibility of reconstructing fully the conditions originally determining the occurrence of reduced rather than zero grade, and believed that the appearance of one grade or the other was largely contingent upon variations in speech-tempo, Hirt, on the other hand, undertook a thorough-going analysis of the distribution of reduced and zero grades in relation to the place of the accent.<sup>62</sup> On this basis he concluded that only zero grade could occur immediate-

<sup>57</sup> Nagy, *Greek dialects*, pp. 18-20 and pp. 30-34, points to the close parallel between the expansion of the fourth conjugation in Latin-Romance and developments in the Irish verb. A thorough re-examination of the Latin fourth conjugation is presently in preparation by Dr. Marian Astuti Gennaro.

<sup>58</sup> *Der indogermanische Ablaut, vornehmlich in seinem Verhältnis zur Betonung* (Strassburg, 1900).

<sup>59</sup> *Indogermanische Ablautprobleme, Untersuchungen über Schwa secundum, einen zweiten indogermanischen Murrelvokal* (Strassburg, 1916).

<sup>60</sup> *Indogermanische Grammatik, Teil II, Der indogermanische Vokalismus* (Heidelberg, 1921), § 199, pp. 197-199.

<sup>61</sup> *Indogermanische Ablautprobleme*, pp. 118ff.

<sup>62</sup> *Der indogermanische Ablaut*, §§ 795-798, pp. 164-169; *Indogermanische Grammatik, II* (1921),

ly after the accent, and so, although he accepted Sievers' law as operative in other environments, in his view it was, contrary to Sievers' original formulation, limited by accentual conditions. This approach offered a possible solution to the problem posed by Osthoff's observation that both syllabic and non-syllabic resonants occur after a long syllable in many sets of forms (see § 1.2.5 above); forms like Rigvedic *trásva*, *trádhvam* would be as regular as *dhiṣvá*, *ámugdhuam* (although the former violate Sievers' law) because of the position of the accent.

1.4.1. The study of the IE resonant system took a sharp new turn in 1934 with the publication of an important paper on the subject by Franklin Edgerton.<sup>63</sup> In the heyday of the Neo-grammarians School and its principle that sound laws have no exceptions, Sievers, Hübschmann, Osthoff, Brugmann all had hesitated to make such an assertion for their formulation of Sievers' law; it remained for Edgerton to take this step.

1.4.1.1. Edgerton's reformulation of Sievers' law takes the shape of a descriptive statement of PIE phonemics, and may be summarized as follows:

Each resonant phoneme of PIE (SEMIVOWEL PHONEME in Edgerton's terminology) had several allophonic<sup>64</sup> or positional variants determined solely by its place within the chain of segmental phonemes. In prevocalic position each resonant had the following variants:

- (1) In absolute initial position in the speech-unit (i.e. breath-group, whether clause or line of verse): *y*, *v*, *r*, *l*, *m*, *n*.
- (2) After vowel: *y*, *v*, etc.
- (3) After consonant:
  - (a) In initial position in the speech-unit: *iy*, *uv*, *rr*, *ll*, *mm*, *nn*.
  - (b) After heavy syllable: *iy*, *uv*, etc.
  - (c) After light syllable: *y*, *v*, etc.

1.4.1.2. This PIE pattern, according to Edgerton, is not to be found intact in any attested language; in most IE languages only traces of it are preserved, in certain morphological categories. The one exception is the language of the Rigveda. Here too it is no longer a living process, but it is "at least barely and very recently deceased".<sup>65</sup> The Vedic hymns are composed in a language already archaic and somewhat artificial to the poets, one with which some were only imperfectly familiar. But in the pre-Vedic dialect which was the model for the poets, the allophonic pattern of the PIE resonants still prevailed, and a strong feeling for it may be detected in the

§§ 195-199, pp. 192-199.

<sup>63</sup> "Sievers's Law and IE. Weak-Grade Vocalism", *Language*, 10 (1934), pp. 235-265.

<sup>64</sup> Edgerton first used the term ALLOPHONE in this regard in his second major paper on the subject, "The Indo-European Semivowels", *Language*, 19 (1943), p. 84.

<sup>65</sup> "Sievers's Law", *Language*, 10 (1934), pp. 240-241.

Rigveda, and to a lesser extent, even later. The only exception to this congruence between the PIE and the pre-Vedic situation is the case of accented *i* and *ú*, already referred to by Sievers (e.g. *tanúvam*, with *úv* after short syllable); Edgerton regards this as a secondary development of the dialect in question, and certainly not PIE, since such a form, with accented zero grade, violates the rules of PIE ablaut.

1.4.1.3. As evidence for his conclusions Edgerton cites statistics for occurrences of a large number of individual forms. One example should suffice to indicate the method used:<sup>66</sup>

For the root *hū* 'call', the form *huva-* appears generally after heavy syllable, the form *hva-* after light.<sup>67</sup> The expected augmented form *ahva-* appears at least 13 times, while the unaugmented *hva-* is almost eliminated from the language of the hymns, occurring only once, where it appears after a light syllable.<sup>68</sup> The form *huva-* is regularly unaugmented, appearing over 100 times, invariably, with one exception, after a heavy syllable, or initially in the verse. The augmented stem *ahuva-*, with initial light syllable, occurs 9 times in Grassmann's lists:<sup>69</sup> of these Edgerton says that one without question should be read with *-hv-*, while the others may be so read if we assume defective lines (i.e. lacking a syllable). On the other hand, the manuscript text may have a false reading, and we may be dealing with parallel stems in *hava-* or *hvaya-*.

The parallel stem *h(u)vaya-*, always written *hvaya-* in the traditional text, occurs 31 times after a light syllable, where it is invariably pronounced *hvaya-*, with at most one exception, RV 6.26.1, in which Grassmann and Oldenberg read *huvaya-*, but which, according to Edgerton, is probably a defective line. There are six instances after a heavy syllable or initially, of which two ought to be read *huvaya-*; the other four seem to require *hvaya-* if the text is sound, but the original reading may have been *huva-* or *hava-*.

1.4.1.4. Of major importance in demonstrating the automatic nature of the alternation between *iy* and *y*, *uv* and *v*, *ṛ* and *r*, etc. is what Edgerton calls the 'converse of Sievers's law', according to which an etymologically expected *i*, *u*, or *ṛ* at a morpheme boundary before a following *y*, *v*, or *r* respectively is either lost after a short syllable or is restricted in occurrence to positions favoring its retention under Sievers' law. A detailed analysis of Edgerton's evidence in favor of this assumption will be made in the following chapter. For the present it should be noted that Edgerton regarded the converse of Sievers' law as significant not only because it supported his own formulation, but because it tended to undermine the Hirt-Güntert theory of

<sup>66</sup> Edgerton, "Sievers's Law", *Language*, 10 (1934), pp. 249-250.

<sup>67</sup> According to Edgerton preconsonantal long and short syllabic resonants show the same alternants before vowels (cf. "Sievers's Law", *Language*, 10 (1934), pp. 257-258; "The Indo-European Semivowels", *Language*, 19 (1943), pp. 107, 120-121). This position is reasserted more categorically in his statement in "The Semivowel Phonemes of Indo-European", *Language*, 38 (1962), p. 356, "In my opinion, laryngeals are completely irrelevant to the semivowel allophones."

<sup>68</sup> RV 3.20.5, read by Edgerton as *vāsūn rudrān ādityān ihā hve*, with alteration of the manuscript readings *ādityān* and *huve* to produce a more normal *triṣṭubh* close.

<sup>69</sup> Hermann Grassmann, *Wörterbuch zum Rig-veda* (Leipzig, 1873; Wiesbaden, 1955<sup>3</sup>), s.v. *hū*.

the reduced vowel, or ‘*schwa secundum*’. If Sievers’ law and its converse are both aspects of the same phenomenon, then the alternation is between *iy* and *y*, *uv* and *v*, *rr* and *r*, and so in each case the former alternant consists of homorganic syllabic and non-syllabic segments, not a sequence of reduced vowel plus resonant.

1.4.2. Throughout his life Edgerton remained convinced that his formulation of Sievers’ law was beyond reasonable challenge.

1.4.2.1. In 1935, after Albert Debrunner<sup>70</sup> had pointed out that Edgerton’s suggested reading of *\*diyāvāpṛthivī* for *dyāvāpṛthivī* after a heavy syllable<sup>71</sup> would engender metrical monstrosities, and that furthermore outside of this compound the forms *dyāvā* and *dyāvah* can hardly ever be read as trisyllables, regardless of their position in the line, Edgerton replied<sup>72</sup> by denying that Oldenberg, to whom Debrunner had referred, had based the pertinent statistics regarding Vedic metrical types on a sufficiently large sample, by suggesting that where the traditional text reads *dyāvā* and *dyāvas* after a heavy syllable we substitute the alternative (but, with one exception, non-Rigvedic) forms *dīvā* and *dīvas*, and by insisting that if Sievers’ law is sound, it is the duty of the linguist not to content himself with pointing out exceptions but to try to explain them.

1.4.2.2. In 1943, Edgerton undertook a more comprehensive study<sup>73</sup> whose major purpose was to discover the distribution of the allophones of the resonants in all environments, especially in cases of juxtaposition of two or more resonants. His field of inquiry here is almost exclusively the Rigveda, although he does not hesitate to assert his findings for PIE as well. The 1934 statement of Sievers’ law remains the keystone of the structure, and he presents additional supporting evidence, essentially of the same kind as that found in the earlier paper. If anything, Edgerton’s views on Sievers’ law have become more extreme: he suggests that the apparent exception to the law afforded by accented *ī*, *ú* may not have existed even in the ‘Proto-Rigvedic’ dialect underlying the hymns, since “the poets often seem to show squeamishness about using even accented *īy*, *úv* after light syllables”.<sup>74</sup>

1.4.2.3. In 1962, having detected insufficient orthodoxy in a work by Jaan Puhvel<sup>75</sup> and a hint of revisionism in a couple of remarks by Warren Cowgill,<sup>76</sup> Edgerton responded with “The Semivowel Phonemes of Indo-European: A Reconsideration”,<sup>77</sup> which, insofar as it dealt with Sievers’ law, amounted rather to a reaffirmation, without additional corroborative evidence, of his previous position.

<sup>70</sup> “*Dyāvāpṛthivī* or *diyāvāpṛthivī*?”, *Language*, 11 (1935), pp. 117-119.

<sup>71</sup> “Sievers’s Law”, *Language*, 10 (1934), p. 252.

<sup>72</sup> Reply to Debrunner, *Language*, 11 (1935), pp. 120-121.

<sup>73</sup> “The Indo-European Semivowels”, *Language*, 19 (1943), pp. 83-124.

<sup>74</sup> Edgerton, “The Indo-European Semivowels”, *Language*, 19 (1943), p. 94.

<sup>75</sup> *Laryngeals and the Indo-European Verb*, University of California Publications in Linguistics, vol. 21 (Berkeley and Los Angeles, 1960).

<sup>76</sup> “Gothic *iddja* and Old English *ēode*”, *Language*, 36 (1960), p. 485, footnote 4, and p. 497, with footnotes 36 and 37.

<sup>77</sup> *Language*, 38 (1962), pp. 352-359.

1.4.3. Edgerton's 1934 and 1943 papers received widespread acceptance, especially in America, as definitive studies of the PIE resonant system. We may cite as an appraisal typical of many Edgar H. Sturtevant's assertions that "Edgerton has finally demonstrated that Sievers' law must be assumed for Indo-European times".<sup>78</sup>

1.4.3.1. To be sure, certain of Edgerton's views remained controversial even among his adherents, particularly his skepticism regarding the relevance of either laryngeals or reduced vowels to the PIE resonant patterns which he posited.<sup>79</sup>

Sturtevant found himself in disagreement with Edgerton on both counts. Kuryłowicz had already pointed out that the loss of a laryngeal could lead to the occurrence of a prevocalic syllabic resonant under conditions contrary to Sievers' law (see § 1.4.4.1 below), and Sturtevant straddled this position and that of Edgerton with the statement that "as far as the words which have lost a laryngeal after a syllabic semivowel obey Sievers' law [...], this must be due to a secondary spread".<sup>80</sup> On the question of the reduced vowel, Sturtevant was more uncompromising. In *Indo-Hittite Laryngeals* he maintained that since an Indo-Hittite reduced vowel "must be recognized in any case, it is convenient to assume it in reconstructing dissyllabic forms required by Sievers' law",<sup>81</sup> and in a subsequent article devoted to the elaboration of this point<sup>82</sup> he disputed Edgerton's claim that the converse of Sievers' law demonstrated the inadmissibility of a reduced vowel in this context.

From time to time attempts have been made to restate the reduced vowel hypothesis in such a way as to integrate Edgerton's resonant patterns within it. Sturtevant believed he had done so in 1935:<sup>83</sup>

When unaccented short vowels were lost in all convenient positions, a minimal vowel (ɐ) remained wherever its loss would have produced consonant plus consonant or consonant plus semivowel, either initially or after a long syllable. This rule gives us, for the first time, a workable distinction between (e.g.) *pd* and *pɐd*, *tn* and *tɐn*.<sup>84</sup>

Although in his later work Sturtevant drifted away from strict adherence to this rule, a very similar hypothesis, at least insofar as it postulates a stage in which a zero-grade syllabic element occurred automatically between every sequence of two non-syllabic

<sup>78</sup> "Greek Adjectives in -ατος from Indo-European -əhyos", *Classical Philology*, 36 (1941), p. 357.

<sup>79</sup> See footnote 67 and § 1.4.1.4. above.

<sup>80</sup> Edgar H. Sturtevant, *The Indo-Hittite Laryngeals* (Baltimore, 1942), p. 74. Theodoro H. Maurer, Jr., on pp. 11-12 of "Unity of the Indo-European Ablaut System: the Dissyllabic Roots", *Language*, 23 (1947), pp. 1-22, went so far as to call upon Sievers' law in support of the position that many IE long vowels are reflexes of an earlier sequence of short vowel plus laryngeal consonant, since it was his belief that the avoidance of the sequence *ātya* could be better accounted for in terms of relative difficulty of pronunciation if it originally involved a cluster of three consonants, parallel to *aktya*.

<sup>81</sup> Sturtevant, *The Indo-Hittite Laryngeals*, p. 32.

<sup>82</sup> "The IE Reduced Vowel of the *e*-Series", *Language*, 19 (1943), pp. 293-312, especially pp. 309ff.

<sup>83</sup> "Vowel Assimilation or Ablaut in Certain Hittite Words", *Language*, 11 (1935), p. 184, footnote 15.

<sup>84</sup> Edgerton ("Sievers's Law", *Language*, 10 (1934), pp. 264-265) was sympathetic to the view that there might originally have been alternations such as *\*pdés* after light syllable and *\*pedés* (> Latin *pedis*) after heavy, but insisted that the first vowel of *\*pedés* reflected merely an analogically restored full-grade vowel, and not an earlier *schwa secundum*.

segments, has been consistently maintained by Henry M. Hoenigswald.<sup>85</sup> On the other hand, we have the opposite kind of approach in the attempt by Paul W. Brosman, Jr. to demonstrate that recourse to a reduced vowel is unnecessary, at least in the environment of laryngeals, if we assume that laryngeals showed a set of alternants parallel to those of Edgerton's semivowels.<sup>86</sup>

1.4.3.2. These skirmishes over laryngeals and reduced vowels were fought on the outskirts of Edgerton's domain; to many the possibility of an assault on the citadel was unthinkable. Sievers-Edgerton's law became the point of departure for a sizable body of studies devoted, wholly or in part, either to applying Edgerton's formulas to specific problems in one or another IE language, or to explaining away recalcitrant data. Some of these, classified according to the branch of IE most directly involved, are:

(1) GREEK: Hoenigswald's attempt to account for alternative treatments of pre-consonantal zero-grade liquids and nasals, and for anomalous Homeric scansions of resonant clusters, on the basis of the extension of Sievers' law alluded to above (§ 1.4.3.1 and footnote 85);<sup>87</sup> Eric P. Hamp's appeal to Sievers-Edgerton alternations in tracing divergent developments of labiovelars before resonants;<sup>88</sup> Alette Hill's survey of the Greek evidence for Sievers' law, including extensive discussion of its relationship to the much-debated question of the assibilation of *t* before *i*.<sup>89</sup>

(2) INDO-IRANIAN: Edgerton's own study of the simplification of *-ss-* before a consonant, which would explain away those cases of written *-ssy-*, *-ssv-*, etc. in the Rigveda which cannot be read, in accordance with Sievers' law, as *-ssiy-*, *ssuv-*, etc.;<sup>90</sup> Hoenigswald's survey of the behavior of laryngeals, with strong emphasis on Sievers' law and especially his own extension of it;<sup>91</sup> Murray B. Emeneau's suggestion that the Rigvedic pronunciation of (written) *jyotis* was *jotis*, reflecting a Middle-Indo-Aryan *j- < dy-*, which should perhaps also be read in some of the forms of

<sup>85</sup> For example in "Πα, δέδαε, δασύς, and the Semivowels", *Language*, 29 (1953), pp. 291-292; "Some Uses of Nothing", *Language*, 35 (1959), pp. 419-420; p. 97 ff. in Werner Winter, ed., *Evidence for Laryngeals* (The Hague, 1965).

Hoenigswald's formulation of the original distribution of syllabicity in the weak grade shows interesting parallels to some theories of the original distribution of the PIE full-grade vowel, as well as to vowel distributions in some attested languages; cf. Raimo Anttila, *Proto-Indo-European Schwabe-ablaut* (Berkeley and Los Angeles, 1969), pp. 2-3 and passim.

<sup>86</sup> "Proto-Indo-Hittite *ɣ* and the Allophones of Laryngeals", *Language*, 33 (1957), pp. 1-18.

<sup>87</sup> "Πα, δέδαε, δασύς, and the Semivowels", *Language*, 29 (1953), pp. 288-292; "Certain Semivowel Sequences in Greek", pp. 20-23 in J.C. Heesterman, G.H. Schokker, and V.I. Subramoniam, eds., *Pratidānam: Indian, Iranian, and Indo-European Studies Presented to Franciscus Bernardus Jacobus Kuiper on His Sixtieth Birthday* (The Hague, 1968).

<sup>88</sup> "Notes on Early Greek Phonology", *Glotta*, 38 (1959-1960), pp. 187-203, especially pp. 196-197 and 200-203.

<sup>89</sup> "Sievers-Edgerton's Law and the Indo-European Semivowels in Greek", University of North Carolina dissertation (Chapel Hill, 1967); University Microfilms (Ann Arbor) no. 68-2194.

<sup>90</sup> "Indo-European 's movable'", *Language*, 34 (1958), pp. 445-453.

<sup>91</sup> "Indo-Iranian Evidence", in Winter, *Evidence for Laryngeals*, pp. 93-99.

the word for 'sky, day' in which *dy-* appears contrary to Sievers-Edgerton;<sup>92</sup> Winfred P. Lehmann's investigation of Rigvedic forms in *-iya-* following a light syllable, many of which he accounts for by reconstructing a preceding cluster containing a laryngeal;<sup>93</sup> Samuel D. Atkins' study in depth of the metrical distribution, and the degree of adherence to the Sievers-Edgerton law, of forms of the *dyaus*-etymon in the Rigveda, a study which comes tantalizingly close to presenting a model of procedure for re-examining Edgerton's distributional data, but fails to make that leap because of a commitment to the essential validity of the Sievers-Edgerton formulation.<sup>94</sup>

(3) GERMANIC: George S. Lane's analysis of the Old Icelandic *r*-stems, especially the contrast between dative singular *feðr* < \**patri* and *mōður* < \**mātrri*;<sup>95</sup> Lehmann's attempt to demonstrate the late retention in pre-Germanic of Sievers-Edgerton patterns of allophonic variation;<sup>96</sup> a dissertation by Werner Hans Will dealing with the disruption of the Proto-Indo-European resonant system in Proto-Germanic, and the phonemic status of the resonants in the Germanic dialects.<sup>97</sup>

(4) CELTIC: Calvert Watkins' discussion of Old Irish verbal roots of structure *TR-eA-*, almost all of which show the Sievers-Edgerton reflex of consonant + resonant in initial position;<sup>98</sup> Hamp's investigation into the behavior of resonants in Celtic in order to distinguish those cases of prevocalic syllabic resonant reflecting Sievers' law from those originally involving a laryngeal following the resonant, as well as from others resulting from analogical refashioning within the same paradigm.<sup>99</sup>

(5) BALTO-SLAVIC: William R. Schmalstieg's assumption of the generalization of different Sievers-Edgerton sandhi variants to account for contrasts like Old Church Slavic *znati*: Lithuanian *žinóti*, or the parallel contrast Lith. *žioti*: OCS *zījati*.<sup>100</sup>

Although this list of works is impressive, one must bear in mind that many of them

<sup>92</sup> Page 130 in "The Dialects of Old Indo-Aryan", in Henrik Birnbaum and Jaan Puhvel, eds. *Ancient Indo-European Dialects* (Berkeley and Los Angeles, 1966), pp. 123-138.

<sup>93</sup> "On the Reading of Some *ya* Suffixes in the Rigveda", pp. 39-45 in Heesterman, *et al.*, *Pratidānam*.

<sup>94</sup> "The RV *dyaús*-Paradigm and the Sievers-Edgerton Law", *Journal of the American Oriental Society*, 88 (1968), pp. 679-709. Atkins incidentally shows (pp. 694-696) that Emeneau's aforementioned suggested readings with *j-* in place of *gy-* or *dy-* are not supported when we contrast the positions in the line in which the forms in question occur with those in which we would expect the forms to occur if they began with a single consonant rather than a cluster.

<sup>95</sup> "The Genesis of the Stem-Vowel *u(o)* in the Germanic *r*-Stems", *Journal of English and Germanic Philology*, 50 (1951), pp. 522-528.

<sup>96</sup> "The Proto-Indo-European Resonants in Germanic", *Language*, 31 (1955), pp. 355-366.

<sup>97</sup> "The Development of the Proto-Indo-European Resonant System in Germanic", University of Iowa dissertation (1967); University Microfilms (Ann Arbor) no. 67-16,855.

<sup>98</sup> "A Preliminary Study of the History of the Old-Irish Primary A-Verbs", in Morris Halle, Horace G. Lunt, Hugh McLean, and Cornelius H. van Schooneveld, eds., *For Roman Jakobson* (The Hague, 1956), pp. 613-621.

<sup>99</sup> "Evidence in Celtic", in Winter, *Evidence for Laryngeals*, pp. 224-235, especially pp. 227ff.

<sup>100</sup> "The Indo-European Semivowels in Balto-Slavic", *Language*, 35 (1959), pp. 16-17; "A Note on Slavic Verbs of the Type *zějo*: *zījati*", *Word*, 16 (1960), pp. 204-206.

rely heavily on extensive analogical leveling to account for the attested forms, and are to that extent weakened as independent witnesses to the validity of Edgerton's findings.

1.4.4. The success of Edgerton's formulation of Sievers' law in gaining acceptance may be due in part to the fact that it jibed well with contemporary American structuralism, not merely because Edgerton used terms like PHONEME and ALLOPHONE, but because he presented a neat distributional statement of one part of the Proto-Indo-European phonemic system quite comparable to the structural sketches of phonology to which descriptive linguists of the time devoted much of their attention.

As Edgerton reflected American structuralism, so the work of Jerzy Kuryłowicz during this period both reflected and contributed to the structuralism of Europe, with its greater emphasis on the dynamics of linguistic change. In his investigations into IE Kuryłowicz often touched directly on Sievers' law, but over the years his picture of its place within the total system of an evolving IE consonantism and vocalism altered as his view of that system altered.

1.4.4.1. Kuryłowicz's first contributions to the study of Sievers' law antedate those of Edgerton, and appear primarily in the context of a search for clues to the former presence in given etyma of any of the postulated set of consonants, symbolized by  $\varphi$  in Kuryłowicz's notation, which it has become traditional to call LARYNGEALS.

In his 1927 article "Les effets du  $\varphi$  en indoiranien",<sup>101</sup> Kuryłowicz noted, as had de Saussure<sup>102</sup> before him, the correlation between many cases of syllabic resonant in prevocalic position and the  $\varphi$  which may be reconstructed in preconsonantal position after the resonant of Sanskrit *seṭ* roots. So, for example, in contrast to the middle participle *svāná-* from the root *su* (*aniṭ*), we have *suvāná-* from *sū* (*seṭ*); according to Kuryłowicz, *suvāná-* is the reflex of  $\varphi$ \**suṇāná-*, with the syllabic form of the resonant, which originally occurred before consonantal  $\varphi$ , preserved even after the loss of the consonant. Accordingly, many cases of *-i* and *-ū* stems which appear in the Rgveda in forms in which prevocalic *i* or *u* must be read after a short syllable, in violation of Sievers' law (e.g. *śáciyā*, instrumental singular of *śáci*, apparently required by the meter to be read 13 times for written *śacyā*), are explained by Kuryłowicz as traces of a stage in which hiatus remained after the loss of intervocalic  $\varphi$ .

In the same article Kuryłowicz accounts for another set of apparent violations of Sievers' law on the basis of the earlier presence of a laryngeal; these are cases where *-iya-* or *uva-* appear after a short syllable in the Rgveda in a position at the close of a line where a long syllable is normally required.<sup>103</sup> In some of these the short syllable originally ended in a cluster of consonant + laryngeal, and continued to function as metrically long even after the laryngeal was lost. Thus there developed the metrical

<sup>101</sup> *Prace Filologiczne*, 11 (1927), pp. 201-243, especially pp. 223ff.

<sup>102</sup> Ferdinand de Saussure, *Mémoire sur le système primitif des voyelles dans les langues indo-européennes* (Leipzig, 1879), pp. 257ff.

<sup>103</sup> Kuryłowicz, "Les effets du  $\varphi$ ", pp. 239ff.



license of treating a short syllable as long when followed by *-iya-*, *uva-*, even when this practice was not etymologically justified.

1.4.4.2. "Quelques problèmes métriques du Rigvéda",<sup>104</sup> which appeared in the following year, carries this investigation a bit farther. Here Kuryłowicz sees in the language of the Rigveda an intermediate stage in the process whereby the instances of hiatus which arose as a result of the loss of intervocalic laryngeals or from other sources were progressively eliminated by contraction. In the Rigveda there seems to be a kind of equilibrium between hiatus and contraction in which hiatus is preserved, both in internal and external sandhi, if contraction would produce an extra-long syllable, i.e. one in which a long vowel is followed by two consonants (or consonant + pause), or a short vowel is followed by three consonants, although, to be sure, the Rigveda shows some cases of hiatus reflecting a more archaic state and some cases of contraction more in accordance with the rules of the classical language.<sup>105</sup> The characteristic Rigvedic distribution of hiatus and contraction is observable not only in the avoidance of the contraction of prevocalic *iy*, *uv* > *y*, *v* after a heavy syllable (the Sievers' law situation), but in its mirror image, the avoidance of the contraction of two vowels into a single long vowel before two consonants, a phenomenon first noted by Jakob Wackernagel<sup>106</sup> for compounds (e.g. *śatá-aśva-*, with hiatus retained, but *śatáyus-*, contracted from *śatá-āyu-*).

The former set of cases, involving prevocalic *(i)y*, *(u)v*, Kuryłowicz divides into two subgroups: (a) those involving loss of a prevocalic laryngeal, in which *-iy-*, *-uv-* < *-i₂-*, *-u₂-* before vowel (e.g. *j(i)yá*); (b) those involving an earlier reduced vowel, in which *-iy-*, *-uv-* < *-e̊-*, *-ů-* before vowel (e.g. *s(i)yám*, *s(i)yáma*).<sup>107</sup> In both subgroups the general distribution of hiatus and contraction follows Sievers' law, but irregular instances of hiatus are more frequent in group (a), indicating that it is more recent.

1.4.4.3. The second subgroup, which Kuryłowicz touched on only in passing in the article just discussed, takes on central importance in his sketch of the history of IE vocalism in *Etudes indo-européennes I*.<sup>108</sup> There were, according to Kuryłowicz, two chronologically separated periods of vowel weakening in PIE, the first producing zero grade (i.e. loss of a syllable), the second a reduced grade, which in general does not lead to the loss of a syllable except secondarily, under specific conditions; so, for example, the first weakening is reflected in the zero grade of the PIE root *\*seǵh* encountered in Greek *skhetós*, whereas Greek *hektós* comes from *\*seǵhtó-*, with a reduced vowel reflecting the second weakening. It is only forms arising from this second weakening that were subject to Sievers' law, whereby, at a relatively late date,

<sup>104</sup> *Rocznik Orientalistyczny*, 4 (1928), pp. 196-218.

<sup>105</sup> Kuryłowicz, "Quelques problèmes métriques", p. 204.

<sup>106</sup> *Das Dehnungsgesetz der griechischen Composita* (Basel, 1889), pp. 24-27.

<sup>107</sup> "Quelques problèmes métriques", pp. 201-204.

<sup>108</sup> *Etudes indo-européennes I* (Kraków, 1935), chapter 3 ("Les changements vocaliques et leur chronologie"), pp. 77ff. For further discussion of laryngeal between resonant and vowel, see, in the preceding chapter, pp. 34, 39-40, 65-66, 75-76.

a prevocalic sequence of the type *Tiṣ-*, *Tuṣ-*, lost its syllabic element after a short vowel. On the other hand, Kuryłowicz offers an extensive list of roots (e.g. *tyaj*, *pyā*, *syand*, *cyu*, *tviṣ*, *dviṣ*, *śvit*, *svan*) and a number of isolated words (e.g. *śyāva-*, *svásr-*) which occur in the RV, some quite frequently, and often after heavy syllable or pause, which show no trace of an alternant in post-consonantal *iy*, *uv*.<sup>109</sup> The initial clusters here go back to the first weakening, and are stable.

This formulation is irreconcilable with that of Edgerton, as Kuryłowicz explicitly states in an addendum to pages 89-91 of *Etudes indo-européennes I*.<sup>110</sup> Contrary to Edgerton's thesis, the alternation *-y/iy-*, *-v/uv-* is limited to specific roots and suffixes. When *y* and *v* are inherited from PIE they are never 'resolved' into *iy*, *uv* through Sievers' law. Sievers' law may only bring about reduction to *y*, *v* of an earlier *iy*, *uv*, which may come from reduced vowel + resonant before vowel (*-eḷ-*, *-eṷ-*), or from loss of laryngeal between resonant and vowel (*-iḡ-*, *-uḡ-*), as well as from *i + y*, *u + v* at the juncture of two morphemes (Edgerton's 'converse of Sievers' law').

Kuryłowicz also has some words to say about Edgerton's methodology. To alter the manuscript reading at will, or to fit the facts to the rule at the price of positing ten- or twelve-syllable lines in place of the regular eleven-syllable *triṣṭubh* verse, is to undermine our only objective basis for appraisal, namely, statistical average. As for Edgerton's explanation of forms in initial consonant plus *y*, *v* which are never found with *iy*, *uv* but which, on the other hand, seem to be avoided except where permitted by Sievers' law, i.e. after light syllable, Kuryłowicz objects that if *iy* and *y* were variants of a single phoneme, there would be no reason why words containing that phoneme should not appear in any phonetic environment.<sup>111</sup> A different explanation for the restricted distribution of the forms in question is available in the Rigvedic avoidance of extra-long syllables (see § 1.4.4.2 above).

1.4.4.4. A generation separates *Etudes indo-européennes I* from *L'apophonie en indo-européen* (Wrocław, 1956), and upon crossing over from the earlier to the later work we find that Kuryłowicz's theory of IE vocalism has undergone a sea change. The reconstruction of the earliest stages, the concept of reduced vowels, the chronology of vowel weakenings, the interrelation of phonological and morphological developments have all been transformed.

<sup>109</sup> Kuryłowicz, *Etudes indo-européennes I*, p. 90. The validity of these data as a refutation of Edgerton's formulation is confirmed by the investigation pursued below (§ 3.9.1-§ 3.9.3); this agreement, however, carries with it no commitment to Kuryłowicz's theoretical underpinning.

<sup>110</sup> Kuryłowicz, *Etudes indo-européennes I*, pp. 255-257.

<sup>111</sup> Kuryłowicz's underlying assumption seems to be that when allophones are in complementary distribution, the speaker of the language does not choose an allophone and then fit the environment to it, but rather organizes his words according to higher-level rules and then automatically selects the allophone appropriate to the environment. We have no way of knowing whether or not Edgerton disputed this principle; even if he did not, he might have objected that Kuryłowicz's strictures do not apply in this case, since the poets of the Rigveda, although they still showed a strong feeling for the system of the pre-Vedic dialect which was their model, no longer retained full command of it. The most persuasive presentation of Edgerton's position on the adherence of the Rigvedic poets to the allophonic distribution of an earlier dialect is made, not by Edgerton himself, but by Andrew Sihler

Sievers' law too is now stated differently, in terms much more reminiscent of Edgerton's, although the similarity is deceptive. At several points<sup>112</sup> essentially the same formulation is presented.

In the stage immediately preceding the loss of intervocalic laryngeals, the resonants in prevocalic position varied phonetically, but not phonemically, in terms of the preceding syllable, a non-significant vocalic element accompanying the resonant which followed a heavy syllable. With the loss of intervocalic laryngeals, *i, u, r, l, n, m* on the one hand and *i, u, r, l, n, m* on the other were thrown into phonemic opposition because the latter (syllabic) phones, which had formerly been limited to pre-consonantal position (*TR-o-* but *TR̥T-o-* and *TR̥̥-o-*), were now no longer automatically determined by the environment (*TR̥̥-o- > TR̥-o-*, in opposition to *TR-o-*).<sup>113</sup> Thereupon the alternants of prevocalic resonants following a heavy syllable were identified with the new syllabic resonant phonemes, raising Sievers' law from the level of an allophonic to that of a morphophonemic alternation.<sup>114</sup>

There is no unambiguous indication in *L'apophonie* that Kuryłowicz regarded Sievers' law as equally operative (in the sense just described) when the heavy syllable preceding the resonant does not fall within the same word. The only point at which this environment is considered is in the context of metrical lengthening in the Rigveda,<sup>115</sup> and here the discussion of Sievers' law is explicitly limited to Vedic verse and to a specific set of forms.<sup>116</sup> On the other hand, in a sizable body of cases Kuryłowicz disregards Sievers' law in accounting for word-initial sequences of consonant plus syllabic resonant in prevocalic position, and attributes these instead to analogical leveling. Particularly striking are the following two sets of forms:<sup>117</sup>

(1) In verbal roots the forms *TaR-o-* in the southern European languages, *TuR-o-* in Germanic, and *TiR-o-* in Balto-Slavic, originally appropriate to *set* roots (i.e.

on page 250 of his "Sievers-Edgerton Phenomena and Rigvedic Meter", *Language*, 45 (1969), pp. 248-273.

<sup>112</sup> *L'apophonie en indo-européen*, pp. 157, 171, 341.

<sup>113</sup> Kuryłowicz's picture is in fact more complex. It is only in the northern European dialect group (Germanic, Baltic, Slavic) that a stage is posited in which independent vocalic resonant phonemes *r, l, n, m* existed; in the languages of the South (Celtic, Italic, Greek, Armenian), on the other hand, where an independent *ā* phoneme, distinct from *ō*, arose, *TR̥̥-o-* led directly to *TaR-o-* (*L'apophonie*, pp. 120ff., 171). Furthermore, *i* and *u*, regardless of their parallelism with *r, l, n, m* from the point of view of morphological alternations, do not have the same place in the phonological system as the liquids and nasals (Kuryłowicz, *L'apophonie*, p. 393).

<sup>114</sup> We find this approach in the work of Kuryłowicz as early as 1939; see p. 111 of "Le système de l'accentuation védique", *Acta Linguistica*, 1 (1939), pp. 104-118.

<sup>115</sup> Kuryłowicz, *L'apophonie*, § 44, "La source linguistique des allongements finals du Rigveda", pp. 338-355.

<sup>116</sup> Kuryłowicz, *L'apophonie*, pp. 348-349. In footnote 46 ad loc., to be sure, Kuryłowicz admits the (largely speculative) possibility of the former prevalence in the spoken language, and perhaps in PIE, of the kind of vowel lengthening encountered as a metrical device in the RV, and presumably this would imply a correspondingly extensive prevalence of the Sievers' law alternations across word boundaries to which Kuryłowicz attributes the Vedic phenomenon.

<sup>117</sup> Kuryłowicz had already dealt with these in terms of analogical leveling, although in a somewhat more rudimentary fashion, in *Etudes indo-européennes I*, pp. 89, 129-130.

resonant + laryngeal), spread to *aniṭ* roots as well, at the expense of the inherited form *TR-o-*; so Greek *manēnai*, Gothic *munan*, Lith. *minėti*, Slav. *mněti*, for *\*mn-ē-*.<sup>118</sup>

(2) In a number of nouns and adjectives the syllabic resonant was extended to prevocalic position from declensional forms in which it occurred preconsonantly; so *\*diḡeus* (phonemically *\*diḡeus*) 'heaven' after *\*diḡós*, *\*diḡéi*, etc., and similarly *\*ḡhiḡōm* 'winter' after *\*ḡhimós*, *\*ḡkuḡōn* 'dog' after *\*ḡkunós*, *\*ḡrrén* 'lamb' after *\*ḡrnós*; likewise *\*ḡrrús* 'heavy' after *\*ḡrḡōm* (gen. pl.), etc., *\*ḡrrús* 'wide' after *\*ḡrḡōm*, *\*pḡllús* 'numerous' after *\*pḡlḡōm*, *\*tḡnnús* 'thin' after *\*tḡnḡōm*.<sup>119</sup>

Although the scope of Sievers' law is relatively restricted in *L'apophonie*, it plays a significant role in Kuryłowicz's scheme as a catalyst in several instances of analogical restructuring in the individual languages.<sup>120</sup> Thus Sievers' law is one of the links in the chain of phonological and morphological developments leading to the pattern of initial *vṛddhi* in secondary derivation in Sanskrit,<sup>121</sup> the leveling out of the thematic-vowel alternation in the Baltic *-ie/io-* verb,<sup>122</sup> and the Vedic lengthening of vowels under certain conditions in both internal and external sandhi.<sup>123</sup>

1.4.5. A synthesis of the ideas of Kuryłowicz and Edgerton was attempted by Fredrik Otto Lindeman in "La loi de Sievers et le début du mot en indo-européen".<sup>124</sup> He was impressed by Kuryłowicz's observation in *Etudes indo-européennes I* (page 90) that many Rigvedic forms in initial obstruent plus resonant never show anything but the non-syllabic form of the latter. Upon examining this list (to which he himself added further examples)<sup>125</sup> he noted that the words in question were in general of two or more syllables, and he therefore arrived at the hypothesis of a correlation between non-syllabic resonant and polysyllable (except where a laryngeal had been lost or in cases of analogical leveling).<sup>126</sup> This hypothesis was confirmed for Lindeman by the observation that in the case of those stems which did involve an apparent

<sup>118</sup> *L'apophonie*, pp. 171ff., 219ff.

<sup>119</sup> *L'apophonie*, pp. 121ff., 172ff.

<sup>120</sup> Kuryłowicz assigned it such a role again in his interpretation of the Germanic *Verschärfung* as a reshaping of full-grade verbal forms in *-ew-*, *-aw-* to *-euw-*, *-auw-* on the analogy of zero-grade *-uw-*; see p. 446 of "The Germanic *Verschärfung*", *Language*, 43 (1967), pp. 445-451.

A similar focus on the morphological consequences of Sievers' law may be found in Gregory Nagy's *Greek Dialects and the Transformation of an Indo-European Process*, which traces the expansion in the Indo-European languages of suffixal *-ijo-*, *-ijā-* as the productive alternants of *-jo-*, *-jā-*.

<sup>121</sup> Kuryłowicz, *L'apophonie*, pp. 156-157.

<sup>122</sup> Kuryłowicz, *L'apophonie*, pp. 237-238, footnote 32.

<sup>123</sup> Kuryłowicz, *L'apophonie*, pp. 338-355.

<sup>124</sup> *Norsk Tidsskrift for Sprogvidenskap (NTS)*, 20 (1964), pp. 38-108. Another comparison of the views of Edgerton and Kuryłowicz, much more limited in scope, may be found on pp. 15-21 of Hreinn Benediktsson, "On the Inflection of the *n*-Stems in Indo-European", *NTS* 22 (1968), pp. 7-31.

<sup>125</sup> Lindeman, "La loi de Sievers", pp. 59ff.

<sup>126</sup> Lindeman, "La loi de Sievers", p. 62. Lindeman did not accept as convincing Edgerton's argument that if a form of the type *Tyo-* was largely limited in distribution in the RV to position after a short syllable, the existence of an alternant *Tiyo-* was implied, even if not attested (Lindeman, "La loi de Sievers", pp. 58-59, footnote 2).

Sievers' law alternation, the polysyllabic case-forms, as well as compounds, generally showed the non-syllabic form of the resonant.<sup>127</sup> Comparative evidence (e.g. Gk. *dōdeka* < \**dwōdeka* beside *dūo*)<sup>128</sup> led him finally to a modification of Sievers-Edgerton's law for the IE period before the loss of laryngeals according to which prevocalic resonants in word-initial clusters varied according to Edgerton's formulas only in monosyllables, but were always non-syllabic in polysyllables.<sup>129</sup>

1.4.6. Lindeman's paper constitutes a kind of halfway house in the journey away from Edgerton's formulation. A more thoroughgoing rejection, at least for word-initial position, appears in a doctoral dissertation submitted at Yale in 1967 by Andrew Littleton Sihler.<sup>130</sup> Two subsequent papers by Sihler in *Language* present essentially the same position in a more coherent and succinct fashion.<sup>131</sup>

Two lines of investigation intersect in Sihler's dissertation and in the studies based on it:

On the one hand there is a detailed re-examination of much of Edgerton's (and other) Rigvedic evidence (as well as an often devastating dissection of Edgerton's methods) in order to demonstrate that to the extent that we find the distribution of forms in the RV which Edgerton interpreted as evidence of a PIE automatic prevocalic \**CR*- (consonant + non-syllabic resonant) ~ \**CṚR*- (consonant + syllabic resonant) alternation, this 'Edgertonian' distribution is displayed by other forms as well which do not involve a PIE prevocalic \**C(Ṛ)R*- sequence, and therefore 'non-Edgertonian' factors (metrical, syntactic, stylistic) must be sought, and are in fact clearly present, which are adequate, without the help of Edgerton's law, to account both for the distribution in question and for complexities which Edgerton was powerless to explain.<sup>132</sup> The method of approach adopted here is similar in part to that which I had used in an unpublished seminar paper which formed the basis of Chapter 2 below, and the conclusions arrived at are comparable.<sup>133</sup>

<sup>127</sup> Lindeman, "La loi de Sievers", pp. 69-75. A similar observation had been made earlier for Avestan by Bernfried Schlerath, p. 69 of his unpublished dissertation, "Die Behandlung von y und v nach Konsonant in den metrischen Texten des Awesta", Phil. F. Diss., Johann Wolfgang Goethe-Universität, Frankfurt am Main, 1951. I am grateful to Professor Wolfgang Lentz for referring me to this work.

<sup>128</sup> Lindeman, "La loi de Sievers", p. 73. The Gk. form *duōdeka* he regards as a later creation.

<sup>129</sup> Lindeman, "La loi de Sievers", p. 103. For Lindeman's views on the 'converse of Sievers' law', see Chapter 2 (§ 2.6.2) below.

<sup>130</sup> "Proto-Indo-European Post-Consonantal Resonants in Word-Initial Sequences", University Microfilms no. 68-6847 (Ann Arbor, 1967).

<sup>131</sup> "Sievers-Edgerton phenomena and Rigvedic meter", *Language*, 45 (1969), pp. 248-273, and "Word-initial semivowel alternation in the Rigveda", *Language*, 47 (1971), pp. 53-78.

<sup>132</sup> Material supporting this argument is presented primarily in Chapter 3 and the second half of Chapter 5 of Sihler's 1967 dissertation, throughout his *Language*, 45 article, and in *Language*, 47, pp. 71-76. Another argument is also brought up from time to time, and is most fully developed in *Language*, 47, 56-64: that the consistent application of Edgerton's formulas in the reconstruction of the Rigvedic text complicates rather than clarifies the metrical form of the hymns. On this, see below, Chapter 3, § 3.2.3.

<sup>133</sup> On the chronological relation between this seminar paper and Sihler's dissertation, see below,

On the other hand, Sihler enters into an exhaustive examination in the major branches of IE of etyma apparently containing word-initial  $*C(\bar{R})R$ - sequences. He concludes from this study that outside of the Veda there is no valid evidence for a PIE phonologically conditioned alternation of prevocalic  $*CR$ - and  $*C\bar{R}R$ -; most of the cases of apparent PIE  $*C\bar{R}R$ - in attested forms either are of obscure etymology, or point to the earlier presence of a prevocalic laryngeal, or result from later analogical levelings in the individual languages.<sup>134</sup> The Rigvedic language, to be sure, does show a small group of words with initial  $Ciy-/Cy$ - or  $Cuv-/Cv$ - alternation ( $t(u)vám$  and oblique cases,  $d(u)vá$ ,  $d(u)vís$ ,  $t(u)va$ -,  $s(u)vá$ -,  $d(i)yaús$  and  $d(i)yám$ ,  $s(i)yá$ -/  $t(i)yá$ -,  $s(i)yáma$  and other optative forms of this verb, and  $s(u)vás$ ).<sup>135</sup> Here too, however, one or the other of the doublets in each pair is of secondary origin, according to Sihler, and arose not as a phonologically conditioned variant but by analogical processes which resulted in the ready availability to the Vedic poets of a set of alternate forms for use in different metrical contexts.

Once all instances of secondary development have been winnowed out, we are still confronted with a handful of etyma in which PIE prevocalic  $*C\bar{R}R$ - (not alternating with  $*CR$ -) is consistently indicated by most or all of the branches whose testimony is unambiguous. Included among these are the  $u$ -stem adjectives  $*g^w\bar{r}ru$ - 'heavy',  $*w\bar{r}ru$ - 'wide', and  $*t\bar{r}nu$ - 'thin';<sup>136</sup> Sihler accounts for them, as did Kurylowicz (see § 1.4.4.4 above), in terms of paradigmatic leveling.

Then there are the words for 'two' and 'twice',<sup>137</sup> which Sihler employs as touchstones in casting doubt on Edgerton's rules and, since they are monosyllables, on Lindeman's as well. Although Vedic Sanskrit shows alternants  $duv\bar{a}/dv\bar{a}$  and  $duvís/dvís$  respectively, we have Gk. *duo*, Lat. *duo* on the one hand and Gk. *dis*, Lat. *bis* on the other, and evidence from other languages tends to support this repartition. If both forms originally alternated, and each language independently generalized one alternant for each, the observed regularity in the choice of syllabic resonant for 'two' and non-syllabic for 'twice' would be inexplicable. Sihler concludes, therefore,

that PIE had a morphologically correlated contrast of  $*duw$ - and  $*dw$ - in the same root:  $*duw\bar{o}$  (or  $*duw\bar{ö}$ ) was the counting word, with  $*duw$ - in all genders and cases;  $*dw(e)y$ - was the combining form, with three ablaut grades but with an invariant initial cluster  $*dw$ -.<sup>138</sup>

Chapter 2, footnote 1.

<sup>134</sup> So, for example, the disyllabic Latin *diēs* and Skt. *d(i)yaús* are regarded as independent innovations in Italic and Indo-Iranian (Sihler, "Proto-Indo-European Post-Consonantal Resonants", §§ 4.33-4.54); similarly Greek *kúon* and Skt. *s(u)ván*- (§§ 4.81-4.84). Sihler takes pains to distinguish between Sievers' law proper, which concerns suffixes, and Edgerton's generalization from it. Sihler seems to accept the validity of Sievers' law in its limited sense; cf. *Language*, 47, pp. 58, 64, 70.

<sup>135</sup> Sihler, "Proto-Indo-European Post-Consonantal Resonants", §§ 4.285 and 5.1-5.36; also "Word-Initial Semivowel Alternation in the Rigveda", *Language*, 47 (1971), pp. 64ff.

<sup>136</sup> Sihler, "Proto-Indo-European Post-Consonantal Resonants", §§ 4.129-4.137, 4.267-4.270.

<sup>137</sup> Sihler, "Proto-Indo-European Post-Consonantal Resonants", §§ 4.95-4.105; "Word-Initial Semivowel Alternation", pp. 67-68.

<sup>138</sup> Sihler, "Proto-Indo-European Post-Consonantal Resonants", § 4.104.

Sihler leaves unanswered the question of the origin of this "morphologically correlated contrast". The related question of the phonological status of PIE *\*uw* and *\*w*, or of the syllabic and non-syllabic resonants in general, "is explicitly left open pending the accumulation of data adequate for deciding the issues".<sup>139</sup>

And there the matter rests.<sup>140</sup>

1.5. In the course of the last two generations the pendulum has swung far to the left with Edgerton and far to the right with Sihler. Perhaps it is time to try to restore some balance to this vexed question.

The investigations of Chapters 2 and 3 below, which were first undertaken several years before those of Sihler, were conducted in order to determine whether or not the extreme formulation of Sievers' law by Edgerton was supported by the evidence of the Rigveda when that evidence, or at least some of it, was subjected to a re-examination in which the steps were so ordered that the danger of circular reasoning was avoided where possible and made explicit where unavoidable. The answer emerging from this re-examination seems to be negative: Edgerton's formulation is not supported. However, positive indications also emerge, to be discussed in Chapter 4, that demolition of that which is untenable need not leave the entire structure in ruins, and that a pattern can be detected which, even if not that of Edgerton, is a pattern nonetheless.

<sup>139</sup> Sihler, "Proto-Indo-European Post-Consonantal Resonants", footnote 2 to § 1.1. Sihler does point out in passing certain difficulties that inhere in any theory of six resonant phonemes for PIE (§§ 1.14-1.18).

<sup>140</sup> In his review of Gregory Nagy, *Greek Dialects and the Transformation of an Indo-European Process*, in *Language*, 49 (1973), pp. 167-181, Sihler projects his own suspension of judgment onto the scholarly world at large: he writes (p. 168), "For most scholars it would make no difference whether the S-E [Sievers-Edgerton] Law in PIE times was a somewhat loose morphophonemic principle or a rigorously phonotactic one." Regardless whether or not this is an accurate appraisal, it is true that it is less fashionable now than it was in the 1950's to insist on Sievers' law as a "rigorously phonotactic" principle, in part because of the rejection of autonomous phonemics by the generative-transformationalist school; cf. Paul M. Postal, *Aspects of Phonological Theory* (New York, 1968), especially chapters 10 to 15. An example of the impact of generative grammar on the treatment of Sievers' law phenomena in Germanic is Peter H. Erdmann, "Suffixal *j* in Germanic", *Language*, 48 (1972), pp. 407-415.

THE CONVERSE OF SIEVERS' LAW<sup>1</sup>

2.1.1. An inquiry into the evidence adduced by Edgerton in support of his so-called 'converse of Sievers' law'<sup>2</sup> is a convenient starting point for an evaluation of Edgerton's formulation of Sievers' law in general, since the limited extent of this evidence permits an exhaustive treatment within a small compass. The object of this chapter is to show that there is almost no convincing basis for the assumption that a converse of Sievers' law, in the sense understood by Edgerton, operated at any period in Proto-Indo-European, or even at the earliest period of Indo-Aryan. Furthermore, since much of the evidence in support of Sievers' law itself is similar in character to that upon which the converse is based, the demonstration of the invalidity of the latter will point up the need for a new approach to the entire problem.

2.1.2. Edgerton's postulation for PIE of the converse of Sievers' law, requiring the loss of a postconsonantal syllabic resonant when preceded by a light syllable and followed, across a morpheme boundary, by a homorganic prevocalic non-syllabic

<sup>1</sup> This chapter, except for § 2.3.1.(3), footnote 18 to § 2.4.2, § 2.6.2, and various minor additions and revisions, is identical with a paper which I presented during the academic year 1958-1959 to the graduate seminar of the Department of Linguistics at Columbia University. In the summer of 1965, having been informed in May of that year by Professor Warren Cowgill that Andrew Sihler was considering a study of Edgerton's law as a dissertation topic, I sent a copy of my seminar paper to Professor Cowgill for transmittal to Mr. Sihler, in the perhaps over-confident hope that each of us might pursue his area of research without undue duplication of effort. The only reference to my work in Sihler's dissertation is footnote 23 to § 4.126, which reads as follows: "The 'Converse of Sievers' Law', as it properly applies to compounds of *su-* 'well' plus words beginning with *v-* or a vowel other than *u-*, in Sanskrit, and an investigation into Edgerton's methods of analysis of the Rigvedic data on this point, are treated in a dissertation currently in preparation by Franklin Horowitz for Columbia University." Sihler's subsequent article, "Sievers-Edgerton phenomena and Rigvedic meter", *Language*, 45 (1969), pp. 248-273, which is given over more exclusively to a parallel kind of "investigation into Edgerton's methods of analysis", makes no mention of my work at all. And by the time Sihler submitted his second article to *Language*, he felt free to include a discussion of Rigvedic compounds with *su-* plus words beginning with a vowel or with *v-*, and to assert, with respect to Edgerton's reliance on their distribution as confirmation of his hypothesis, "As I have demonstrated, however (1969), this kind of distribution – marked avoidance of position after a final short vowel – is shared by all Rigvedic words beginning CVCV" ("Word-initial semivowel alternation", *Language*, 47 (1971), p. 70, footnote 20). It goes without saying that my name is nowhere to be found in this latter article as well.

<sup>2</sup> "Sievers's Law", pp. 237-241 and pp. 242-244; "The Indo-European Semivowels", pp. 87-90.



resonant (i.e.  $-āti + ya > -ātya-$  in Edgerton's notation), is based exclusively on Indic material. Edgerton himself was pessimistic about the likelihood of finding corroborative evidence in the other IE languages,<sup>3</sup> and to date none that is not patently of late origin has been presented. Thus, Lehmann's application of the term 'converse of Sievers' law'<sup>4</sup> to the development in Germanic first-class weak verbs of forms like Goth. *nasjis* < *\*naziyizi* < *\*noséyesi*, with loss of *i* (< PIE *e*) before *y* after a light syllable (contrast Goth. *sokeis* < *\*sōkiyizi*, with retention of *i* before *y* after a heavy syllable), concerns only Germanic and not PIE, since it presupposes the change of PIE *e* > Gmc. *i* in certain environments.

2.1.3. The Indic material presented by Edgerton is of two kinds: attested lexical forms showing loss of syllabic resonant before corresponding non-syllabic resonant, and Vedic forms not showing such loss in the written text, but which, upon examination of their occurrence in the Rīgveda, seem to favor the inference that they were subject to the converse of Sievers' law, since they almost never appear in environments where the attested form would violate the law.

2.2.1. The first group of forms is drawn mostly from Whitney (*Skt. Gram.*, 1879<sup>2</sup>, § 233a) and Wackernagel (*Altind. Gram.*, I, § 53), where instances of the loss of etymologically expected *i* and *u* before prevocalic *y* and *v* respectively are listed; as Edgerton indicates, most of the clear cases occur after a light syllable, in accordance with Sievers' law, which requires simply *y* and *v*, and not *iy* or *uv*, in that position. The following forms are cited by Edgerton:

(1) In fifth- and eighth-class verbs in Sanskrit, where the present stem ends in  $-nu-$  or  $-u-$ , the *u* is usually dropped before the *v* and *m* of the first person dual and first person plural endings, except when the root preceding the  $-nu-$  ends in a consonant; thus 1. du. *su-n-vás*, 1. pl. *su-n-más* (beside *su-nu-vás*, *su-nu-más*), but only *āp-nu-vás*, *āp-nu-más*.<sup>5</sup> Edgerton regards this alternation as a clear example of the converse of Sievers' law, since  $-uv-$  is simplified to  $-v-$  after a light syllable, but retained after a heavy one; the parallel simplification of  $-um-$  to  $-m-$  he considers an analogical extension. Although no first person dual forms of these verbs occur in the Rīgveda, Edgerton does cite 1. pl. *kur-más*, *kṛ-ṇ-mahe* (cf. also *man-mahe*, *á-man-mahi*) as an indication that the pattern was well established at the earliest attested period of the language.

This morphological alternation is the most persuasive bit of evidence in support of the converse of Sievers' law, and, as will be shown presently, constitutes the only early evidence which is not open to serious objection. I shall discuss it further after the other evidence has been presented.

<sup>3</sup> "The Indo-European Semivowels", p. 90.

<sup>4</sup> See above § 1.2.1, footnote 10.

<sup>5</sup> A similar loss of *u* in the third-class verb *hu* is mentioned by the Hindu grammarians; thus *juh-vás* for *juhuvás*, etc.

(2) *anu* plus forms in *v* + vowel; the earliest examples are two hapax legomena, *anvartitá* (RV 10.109.2) and *ánvartiṣye* (AV 14.1.56). The *Pada-pāṭha* analyzes these into *anu-art-*, but the analysis *anu-vart-* is widely accepted as more likely, as *art-* is a very doubtful root.<sup>6</sup> In later texts there are also *anvāsana-* beside *anuvāsana-*, and *anvā-* for *anu-vā-*.

(3) *pari* plus forms in *y* + vowel: *paryan*, *paryanti*, *paryāyāt*, *paryāṇa-*.

(4) *abhyārti* for *abhí + iyarti*.

(5) *antaryāt* for *antar + iyāt* (optative of *i*).

None of the forms under (3), (4), and (5) occurs in the Rigveda.

(6) In the Brāhmaṇas, *tvaí*, *nvaí*, for *tú*, *nú* + *vaí*, and *tvádvá* for *tú* + *vádvá*. In Edgerton's terms, these would be generalizations of sandhi variants originally normal after a short vowel.

(7) Cl. Skt. *svaṛṇa-* 'gold' beside *suvaṛṇa-*, the longer form attested as early as the RV in the meaning 'beautifully colored'. This would be a similar generalization of the sandhi variant after a short vowel.

(8) *urvāśi*, name of a female mythological figure. It occurs five times in the Rigveda, in two of which<sup>7</sup> it is interpreted as an appellative by Grassmann<sup>8</sup> and Böhtlingk-Roth,<sup>9</sup> with the meaning 'ardent desire', and is analyzed as *uru-vāśi* 'wide wishing'. It is possible, however, to regard it as a proper name even in these two passages,<sup>10</sup> and names of mythological figures are often notoriously difficult to etymologize.<sup>11</sup>

Several attestations of loss of etymological *i* or *u* outside of the conditions for the converse of Sievers' law are explained away by Edgerton on the assumption that the written text distorts the original linguistic form:

(9) In the case of AVPaipp. 20.28.10 *cārvāk* and *cārvadanaḥ*, for *cāru-vāk* and *cāru-vadanaḥ*, where the *u* is lost after a heavy syllable, contrary to Sievers' law, Edgerton states that the meter proves that the pronunciation was actually *cāruv-*; according to Edgerton the manuscript is very corrupt, and we must attribute the discrepancy between the spelling and the pronunciation in these two words to this fact.

In two other cases Edgerton has less basis for altering the attested form:

(10) RV 5.1.12d has a form written *uruvyāñcam*, which in the repetition in TS 4.4.4.2d reads *urvyāñcam*. The meter requires four syllables. Edgerton reconstructs

<sup>6</sup> Cf. Otto Böhtlingk, *Sanskrit-Wörterbuch in kürzerer Fassung* (St. Petersburg, 1879-1889), s.v. *anvartitár-*; William Dwight Whitney, *The Roots, Verb-Forms, and Primary Derivatives of the Sanskrit Language* (Leipzig, 1885), s.v. *rt*, *art*.

<sup>7</sup> RV 4.2.18 and 7.33.11.

<sup>8</sup> *Wörterbuch zum Rig-veda* (Leipzig, 1873), s.v.

<sup>9</sup> Otto Böhtlingk and Rudolf Roth, *Sanskrit Wörterbuch* (St. Petersburg, 1855-1875), s.v.

<sup>10</sup> Cf. Hermann Oldenberg, *Rgveda. Textkritische und exegetische Noten* (Berlin, 1909, 1912), *ad loc.*

<sup>11</sup> J. Scheftelowitz, "Ein urindisches Liquidengesetz", *KZ*, 53 (1925), p. 255 associates it instead with OBulg. *varō* 'Glut', Arm. *var* 'brennend, heftig'. This is rejected by M. Mayrhofer, *Kurzgefasstes etymologisches Wörterbuch des Altindischen* (Heidelberg, 1956—), s.v., in favor of *uru-vāśi*.

both as *urviyāñcam*, but there is no metrical reason not to regard the reading of the Rigveda as the correct one.

(11) In a Brāhmaṇa passage *dvyoga-* occurs once for *dviyoga-* after a heavy syllable. In his "Sievers's Law" article Edgerton assumes *a priori* that the actual pronunciation was *duvyoga-*.

Edgerton does not consider several other forms cited by Whitney and Wackernagel because of their more or less doubtful nature; they will not be discussed here.

2.2.2. Of the forms listed above, the only strong evidence for the converse of Sievers' law which comes from the earliest (i.e. Rigvedic) period, aside from the indirect testimony of the fifth- and eighth-class verbs, is the hap. leg. *anvartitā*, which occurs in the late tenth Maṇḍala. To this Edgerton adds two forms, also from the tenth Maṇḍala, which seem to show the loss of etymological syllabic *r* before consonantal *r* and after a light syllable. These are *cakre* and *dadhre*, which in RV 10.90.8 and 10.82.5 respectively are not to be interpreted, as elsewhere, as perfect middle third person singular, but as third person plural. Edgerton derives these from *cakr-*, *dadhr-* plus the 3. pl. ending *-re*, in which case *\*cakṛre > cakre*, *\*dadhr̥re > dadhre* under the converse of Sievers' law. The usual 3. pl. forms, *cakrire* and *dadhrire*, Edgerton regards as secondary analogical developments.

Sturtevant, in his article "The IE Reduced Vowel of the *e*-Series",<sup>12</sup> offers some cogent criticism of these two etymologies. It is safer, according to Sturtevant, to set up analogical proportions to account for the spread of a suffix, rather than to operate with mere abstractions like stems and suffixes. Such a proportion would be perf. mid. 3. sg. *papte*: *cakre* = 3. pl. *paptire*: *cakrire*. Therefore *cakrire* and *dadhrire* not only are the common attested forms, but probably always were normal in the third plural. The 3. pl. forms *cakre* and *dadhre* may have originated through haplogy, of which there are other instances in the Veda.

2.3.1. The rest of the evidence submitted by Edgerton is based on a critical examination of the text of the Rigveda. There are, first of all, a number of lines which seem metrically defective unless corrected in some way:

(1) RV 1.127.1f and 10.105.5a are each regarded as having one syllable too many. In the former Edgerton drops the *u* in *ānu vaṣṭi*, and in the latter the *i* in *ādhi yās*. However, both hymns are metrically difficult,<sup>13</sup> and any restoration is hazardous; furthermore, even if we attempt to emend these lines without drastic alteration of wording or word order, there are various possibilities. We may recall the suggestion of Christian Bartholomae,<sup>14</sup> not with respect to these two passages, but several others, that we may have to assume forms like *\*dhi*, *\*nu*, beside *ādhi*, *ānu*, just as we

<sup>12</sup> *Language*, 19 (1943), pp. 311-312.

<sup>13</sup> Cf. Edward Vernon Arnold, *Vedic Metre* (Cambridge, 1905), pp. 294 and 323 ad loc.

<sup>14</sup> *Studien zur indogermanischen Sprachgeschichte*, 1. Heft (Halle, 1890), pp. 107-109; also cf. Arnold, *Vedic Metre*, p. 101, § 151 (iii), regarding possible loss of initial *a* in *abhi*.

have both Skt. *pi* and *api*. Although this is speculative, it indicates that, given the wide range of alternative readings at our command, random textual emendations are of doubtful value in the linguistic investigation of Vedic Sanskrit.

(2) RV 7.86.4d has *turá* (Pada-pāṭha *turáh*) *iyām* (optative of *i*) at the end of a tristubh line, with one syllable too many and an irregular cadence. It may be a case of 'secondary sandhi' (i.e. *-ás iy-* > *-á iy-* > *-éy-*), to be read *turéyām*, but Edgerton offers the alternative reading *turó yām*, with *y* for *iy* in accordance with Sievers' law. This is as plausible an explanation as secondary sandhi, which is rare and phonologically irregular; nevertheless, secondary sandhi seems to be indicated elsewhere in the Rgveda,<sup>15</sup> and unless alleged instances of it can all be accounted for otherwise, we must accept it as possible.

(3) In footnote 53 to page 106 of his "The Indo-European Semivowels", Edgerton notes that *diviyájo* in RV 9.97.26d makes the line a syllable too long, and refers to Bartholomae's suggested reading *divyájo*,<sup>16</sup> which would agree with the converse of Sievers' law. It does not agree, however, with Edgerton's tentative formula for a sequence of three resonants following short vowel + consonant (the preceding word is *ná*), and so Edgerton prefers Oldenberg's suggestion of *dyuyájo* (*RV Noten, ad loc.*). In Oldenberg's note, which is laconic, to be sure, there is no indication that he regarded *dyuyájo* as anything other than a normal type of compound in *dyu-*, and so we may take it.

2.3.2. There are eight other emendations which Edgerton makes on the basis of so-called 'double errors'. Here what is written in the text as a non-syllabic semivowel, liquid, or nasal following a heavy syllable is interpreted by Edgerton as syllabic, in agreement with Sievers' law, and the original syllable count of the line is restored by changing a sequence of *iy* or *uv* after a light syllable, which in each of these eight cases happens to occur in the same line, to simple *y* or *v* respectively, in agreement with the converse of Sievers' law. Thus in RV 1.112.13 *sūryam pari yātháh* is read as *sūriyam paryātháh*. In a similar way Edgerton suggests that RV 1.121.8 *abhí yodhāná* be read as *abhyò-*; 7.83.8 *pāriyattāya* as *pārya-*; 8.12.29 *niyemiré* as *nye-*; 8.23.16 *vasuvídam* as *vasvídám* (likewise 10.42.3); 10.37.3 *ānu vartate* as *án va-*; and 10.49.7 *pāri yāmi* as *pāryāmi*. Since Sievers' law admittedly did not operate without exception in the Rgveda, these emendations are not called for, and cannot stand as objective evidence.

2.4.1. A major argument in support of the converse of Sievers' law is introduced in Edgerton's "Sievers's Law", and is supplemented in "The Indo-European Semivowels". There is a sizable number of instances in the Rgveda of compounds in *su-* 'well, good' plus forms beginning in *v-*; yet cases are lacking where *sv-* instead of

<sup>15</sup> Cf. Arnold, *Vedic Metre*, p. 79.

<sup>16</sup> Bartholomae, *Studien* 1 (1890), p. 101.

*suv-* is to be read.<sup>17</sup> Classical Sanskrit, to be sure, has *svarṇa-*, but only *suvarṇa-* occurs in the Rigveda. The reason, however, is not that the converse of Sievers' law does not operate here, but that the Rigveda never, or practically never, uses these compounds in a phonetic environment which would require *sv-* for *suv-*. In other words, the Vedic poets were reluctant to use a word like *su-varṇa-* anywhere but initially in the line or after a heavy syllable, where it is phonetically regular.

The commonest word of this sort is *su-vīra* 'rich in heroes'. It occurs in 65 verses, invariably after a heavy syllable or initially in the line. Edgerton also tested all occurrences of the first twelve compounds of *su-* + words in *v-* listed in alphabetical order in Grassmann's *Wörterbuch zum Rig-veda*. Out of 30 occurrences, he found 29 after a heavy syllable or initially, one after a light syllable. Therefore, out of 13 different stems, occurring 95 times, only one case was found after a light syllable.

2.4.2. Although this argument seems convincing at first sight, it does not take into account the fact that the Rigveda is not a random sample of the language under consideration, but a metrical text which imposes its own limitations on the distribution of forms. The only way to demonstrate that the conditions for the avoidance of a form are phonological rather than metrical is to show that forms of similar metrical but different phonemic structure are not similarly avoided in the same environment.<sup>18</sup> The following study indicates that this is not the case here.

2.4.3. Every occurrence of every compound listed in Grassmann's *Wörterbuch* consisting of *su-* + any form beginning in a consonant was examined.<sup>19</sup> On the assumption that the metrical length of the initial syllable had an effect on the distribution of the forms in question, two groups were set up: those in *su-* + single consonant + vowel, and those in *su-* + consonant cluster + vowel. Within each of these groups the number of occurrences of forms in *su-* + *v-* initially in the line, after heavy syllable, and after light syllable,<sup>20</sup> were compared with the corresponding number of

<sup>17</sup> In "The Indo-European Semivowels", p. 118, § 80, Edgerton does mention that the sequence *suv-* in compounds in *su-* + initial *i-* or *vi-* alike (aside from *suvitá-*, which he treats separately) occurs 12 times after heavy syllable and twice after light, and in one of the latter it is probably to be read *svi-*. He does not cite the form or the verse in question; however, *su-vidātra-* does occur after a short vowel in two verses, and it is easy to speculate that Edgerton read a 'double error' into one of them (RV 10.15.9c, *āgne yāhi suvidātrebhir arvān*).

<sup>18</sup> This is the principle applied by Wackernagel, *Das Dehnungsgesetz der griechischen Composita*, p. 25, in attempting to show that the distribution of contraction and hiatus in Rigvedic compounds (see above, § 1.4.4.2) is a feature of the language and not merely of the text. Atkins ("The RV *dyāus*-Paradigm", *Journal of the American Oriental Society*, 88, 1968, p. 700, footnote 35) performs the same kind of test in examining the distribution of the forms *divās*, *divi* in the Rigveda, but fails to draw more general conclusions from it. It has already been indicated (§ 1.4.6. above) that Sihler adopts this approach extensively in his dissertation and his 1969 and 1971 articles in *Language*.

<sup>19</sup> Compounds of *su-* (*sv-*, *suv-*) + vowel and those in *sū-* were omitted.

<sup>20</sup> In determining the environment of these forms, the Samhitā text (Theodor Aufrecht, ed., *Die Hymnen des Rigveda*, Bonn, 1877<sup>2</sup>) was adhered to at all times, except that line- (i.e. pāda-) initial occurrences not indicated in the Samhitā text were checked against Maurice Bloomfield, *A Vedic*

occurrences of forms in *su-* + any other consonant, where Sievers' law plays no role. The results of this comparison are as follows:<sup>21</sup>

*C* = any consonant; *T* = any consonant other than *v*; *A* = any vowel

Group I:

	<i>su-vA-</i>	<i>su-TA-</i>
Initially in line	49	233
After consonant, visarga, anusvāra, long vowel or diphthong (heavy syllable)	189	935
After short vowel (light syllable)	21	151
Total:	259	1319

Group II:

	<i>su-vCA-</i> (only <i>suvratā-</i> )	<i>su-TCA-</i>
Initially in line	—	71
After heavy syllable	3	183
After light syllable	2	153
Total	5	407

Group I presents the relevant data. Out of 259 occurrences of forms in *su* + *v* + vowel, 21, or 8.1 %, follow a light syllable. Out of 1319 occurrences of forms in *su* + any other consonant + vowel, 151, or 11.4 %, follow a light syllable. There is a difference of only 3.3 %, therefore, in the distribution of the two sets of forms.

Even this discrepancy can in part be accounted for. The difficulty lies in the word *suvīra-*, which is atypical in distribution, never following a light syllable in 65 occurrences. But in 38 of these occurrences it falls at the end of the cadence of a trimeter line, where a preceding heavy syllable is to be expected. Why this particular word is used so frequently in this position may have to do with its meaning and not its form, and should first be studied as a philological and not a phonological problem.

Since the distribution of forms of both types, *su-vA-* and *su-TA-*, is almost the same, any theory that takes account only of the former, as Sievers' law does, is not a sufficient explanation. If we regard this distribution as metrically determined, however, it accords with what we observe in Vedic meter: as Oldenberg pointed out long

*Concordance* (Cambridge, Mass., 1906). Identical collocations of words were included in the tally each time they occurred, except that in the case of an entire *pāda* repeated as a refrain in successive stanzas of a hymn, only one occurrence was counted (e.g. RV 10.62.1-4).

<sup>21</sup> The following two small sets of forms, which present special problems, are not included in the main tabulation: (a) compounds with *su-* which in turn constitute the second member of larger compounds: after heavy syllable, *su-TCA-*: 1; after light syllable, *su-vA-*: 1, *su-TA-*: 1, *su-TCA-*: 6; (b) case forms of *su-bhū-* and *su-dhī-* in which the stem is followed by a vowel; in these it is generally agreed that a separate syllable *-bhū-*, *-dhī-* was pronounced, although what is recorded in the text is a consonant cluster, *-bhv-*, *-dhy-*, with svarita accent on the following vowel (e.g. gen. sg., written *sudhyās*, interpreted as *sudhīas* or *sudhīyas*): after heavy syllable, 7; after light syllable, 10.

ago in this connection, alternations of long and short syllables and sequences of longs are much more common than sequences of two or more short syllables.<sup>22</sup>

The figures in Group II confirm the metrical interpretation just stated. When a following consonant cluster makes the syllable in *su-* long, then 153 out of 407 instances, or 37.6 %, follow a short syllable. There is no longer an avoidance of this position comparable to that found in Group I.

The data for Group II also dispose of an objection that might be raised on the basis of laryngeal theory. There is good reason to believe that the etymon of Skt. *su* originally had an initial laryngeal (cf. Gk. *eu-s*, *ēu-s*, Hitt. *assu-s*). There is even evidence for this in the Rigveda, where *ū śú*, *abhí śú* occur for *u + śú*, *abhi + śú*.<sup>23</sup> If the laryngeal was still present when the hymns were written, even a preceding short vowel would have been followed by two consonants (*-Hs-*), and the syllable would automatically have become heavy; therefore the infrequent occurrence of forms of the type *su-CA-* after a short vowel could not be explained as an avoidance of a preceding light syllable, regardless of whether we attributed that avoidance to Sievers' law, as Edgerton does, or to the meter. But if before *su* there was no difference in weight, in terms of the heavy/light opposition, between a syllable ending in a short vowel and one ending in a long vowel or consonant, then the difference in weight between the types *su-CA-* and *su-CCA-* should not have affected the frequency of occurrence of short vowels in the preceding syllable, as in fact it did. It follows that the initial laryngeal must have been lost in the form *su* before the time of the Rigveda, and *ū śú*, *abhí śú* were formulas inherited from an earlier stage of the language.

2.4.4. The distribution of verbal forms beginning in *y* preceded by the preverbs *ní* and *ví* and of nominal compounds with *ní-* and *ví-* plus a second element in *y-*, which Edgerton also cites in support of the converse of Sievers' law, can be explained in the same way as forms in *su-*. Out of 22 cases of preverb *ní* + verbal form in *y-*, only one occurs after a short vowel (this is the form *niyemiré*, which Edgerton reads *nye-* on the basis of a 'double error'). Likewise out of 19 instances of preverb *ví* + *y-*, there is one after a light syllable. Noun compounds in *ní-y-*, *ví-y-* are also practically limited to initial position or to that after a heavy syllable. However, we find similar proportions in other nominal and verbal combinations with *ní* and *ví*. If we check all nominal compounds with these two elements in which the second member begins in *k*, *kh*, *g* or *gh*, and all verbal forms listed in Grassmann's *Wörterbuch* under these four letters which are associated with an immediately preceding *ní* or *ví*, we find that out of 31 cases of *ní* and 38 of *ví* before single consonant + vowel, only one and four respectively follow a short vowel.

2.5.1. Another argument which Edgerton introduces concerns the disyllabic preverbs

<sup>22</sup> See above, § 1.2.6.

<sup>23</sup> Cf. Kurylowicz, *Etudes indo-européennes I*, p. 30.

*āti, ādhi, āpi, abhi, pári, prāti*, all of them with light syllable before *i*. When these precede a form in initial *y-*, the sequence *-iy-* should yield *-y-*. Similarly with *ānu + v-*, *-uv-* should yield *-v-* (the cases where it has been suggested that this actually took place have been dealt with above, §§ 2.3.1-2). The necessity of dropping the *i* or *u* can be avoided in the case of the preverbs beginning with *a-* by fusion of the *a-* with a preceding final vowel to produce a heavy syllable; this is impossible, however, in the case of *pári* and *prāti*. What is done to avoid violation of the converse of Sievers' law, according to Edgerton, is to separate the preverb from verbal forms in *y-*. Whereas *ní* and *ví* each occur a score of times immediately before such forms, this position is rare with the other six preverbs in *-i* (about a score with all together).

2.5.2. However, if we examine every unaugmented finite verb form<sup>24</sup> beginning in a single consonant which is listed by Grassmann in conjunction with the preverb *pári*, we find that the ratio of instances where the two components are separated to those where they are joined is roughly the same, regardless of whether the verbal component begins in *y-* or any other consonant. When the verb begins in *y-*, *pári* immediately precedes in 12 cases and does not in 18; of these 18, however, 6 occur in a refrain which is repeated in identical form in six consecutive verses of one hymn (RV 1.108.7-12). The true ratio is accordingly 12 to 13, since the six cases in question should be reckoned as a single occurrence. The corresponding ratio for verbal forms in all other consonants is 100 to 90.

The varying distance of *pári* and the other disyllabic preverbs from the verb can be easily explained in metrical terms. Since sequences of short syllables occur less freely in the Rígvēda than alternations of long and short, the preverbs consisting of such sequences must be shifted around more than monosyllables in order to fit the meter.

2.6.1. We must therefore conclude that there is hardly any solid evidence for the converse of Sievers' law in the early Vēda. The evidence points instead to a development between the time of the later Vēda and that of Classical Sanskrit. The fact that this was a period of significant change in the distribution of vowels and semivowels, culminating in the system of Classical Sanskrit sandhi, lends support to this assumption.

2.6.2. This view parallels that which Lindeman arrived at by a different route.<sup>25</sup> In accordance with his contention that in word-initial position PIE syllabic and non-syllabic resonants alternated only in monosyllables, he maintains that such an alternation as Cl. Skt. *svarṇa-/suvarṇa-* must be relatively recent. Originally, the source of a compound like *su-varṇa-* 'beautifully colored' was phonemically *\*/sw-worno-/*, with a distinct morphemic division between the elements; a minimal pair at this

<sup>24</sup> Non-finite verb forms are omitted because of the difficulty in separating them from truly nominal forms.

<sup>25</sup> Lindeman, "La loi de Sievers", pp. 98-103.



period would be \*/sw-woydo-/, attested as Vedic *su-véda-* (glossed by Grassmann as 'leicht zu gewinnen, zu erlangen'), opposed to (and not alternating with) \*/swoydo-/, Vedic *svéda-* 'Schweiss'. According to Lindeman, it was only when *suvarṇa-* was no longer generally recognized as a compound that there arose an alternant *svarṇa-*, parallel to the alternant which developed in compounds like \*/sw-Hesty-/ > *s(u)vastí-* after the loss of the initial laryngeal of the second member.

2.6.3. There remains the problem of the fifth- and eighth-class verbs. The fact that *u* here is lost before *m* as well as *v* indicates that more than Sievers' law is involved. If the alternation of 1. pl. *su-n-más* : *āp-nu-más* arose on the analogy of 1. du. *su-n-vás* : *āp-nu-vás*, it is equally likely that the latter arose on the analogy of the alternation in the suffix *-nu-/-nv-/-nuv-* before endings beginning in a vowel (act. 3. pl. *su-nv-ánti* : *āp-nuv-ánti*, mid. 1. sg. *su-nv-é* : *āp-nuv-é*, etc.). These last forms are, to be sure, examples of the alternations described by Sievers' law itself, as distinct from the converse. But the precise nature of the phenomena attributed to Sievers' law remains to be determined, and the assumption of a PIE converse of Sievers' law does not aid in the solution of the problem.

## THE EVIDENCE OF RIGVEDA, MANDALA II

3.1.1. The results of the previous chapter have implications reaching beyond the converse of Sievers' law. It has been shown that in the case of those forms adduced by Edgerton as evidence for the converse of Sievers' law, the pattern of distribution of forms in the Rigveda in terms of the weight of the previous syllable can be easily accounted for in metrical rather than phonological terms. But the evidence drawn from the Rigveda for Sievers' law in general is preponderantly of the same distributional type,<sup>1</sup> and so could similarly be accounted for in metrical terms, as Oldenberg originally pointed out.<sup>2</sup>

3.1.2. Is the Rigveda therefore of no positive value in the investigation of Sievers' law phenomena? Insofar as Sievers' law states that prevocalic syllabic resonants regularly follow heavy syllables, the Rigvedic evidence agrees, but is irrelevant as a demonstration of the operation of the law outside of a metrical text. But Sievers' law also presupposes an alternation of syllabic and non-syllabic resonants within the same etyma, and here the Rigveda proves to be of crucial importance.

3.2.1. The orthography of the Samhitā text does not in general show variant forms of a given etymon. However, both the native tradition and Western scholarship agree in the necessity of altering the reading of the Samhitā text at times in order to achieve a more regular metrical pattern in a line. Thus the Prātiśākhya to the Rigveda states: "In an incomplete (Pāda) the perfection (i.e., the required number of syllables) should be sought by means of a resolution (*vyūha*) of semivowels as well as coalesced vowels."<sup>3</sup> Likewise European authorities like Grassmann, Oldenberg, and Arnold reckon constantly with forms which are resolved, out of metrical considerations, into a larger number of syllables than called for by the Samhitā text. For example, Grassmann's *Wörterbuch zum Rigveda* presents under the listing for 'zwei' *duō* beside *dvō*, *duā* beside *dvā*, etc., although *dv-* appears everywhere in the Samhitā text.

<sup>1</sup> Cf. for example § 1.4.1.3. above.

<sup>2</sup> See § 1.2.6. above.

<sup>3</sup> *Rgveda-Prātiśākhya* with the Commentary of Uvata Mangal Deva Shastri, Punjab Oriental Series XXIV (Lahore, 1937), vol. III, p. 66 (Paṭala VIII.40). Similar instructions are found on p. 126, Paṭala XVII, pp. 21-23.

3.2.2. If there were general agreement either on the metrical pattern of each line of text or on invariant rules for syllabic resolution of given forms, we could arrive at a reconstructed text which could then provide a relatively secure base for the study of the alternation of syllabic and non-syllabic resonants. That no such base exists becomes evident after a glance at Edgerton's treatment of the root *hū*, where he assumes metrically defective lines at will (see § 1.4.1.3. above), or his reply to Debrunner on *dyāvāprthivī*, where he challenges the general applicability of Oldenberg's statistics on metrical types (§ 1.4.2.1. above), or his positing 'double errors' in a line, whereby he departs from the text (and the accepted reading of other scholars) in two places in such a way that one emendation cancels the other out in terms of syllable count (§ 2.3.2 above). Other similarly unconventional reconstructions of the text can be cited in profusion from Edgerton's work.

3.2.3. Grassmann, Oldenberg, and Arnold did not have the same axe to grind, and so their readings may be more unbiased, but none of them avoid the appearance of circularity in positing metrical patterns on the basis of a reconstructed text in which extensive emendation has been made in order to fit the text to the meter which has been posited. To be sure, Arnold gives a persuasive account of his technique, and presumably the others who preceded him operated in a similar way:

If one textual correction will rectify ten verses, we make the textual correction: if the admission of one metrical variation or irregularity will accord with the text of ten verses, we admit the metrical variation. The full application of this principle can only be learnt by experience: but its short statement will sufficiently indicate the importance of a full collection of facts as a basis for any theory.<sup>4</sup>

Nevertheless, when a particular reading is challenged, as is often the case in Edgerton's work, the only basis for judgment at present is reliance on one's own 'feel' for the meter or on that of one or another scholar.<sup>5</sup> Thus Sihler's attempt to demonstrate that Edgerton's readings complicate the metrical picture is based on a thorough-going commitment to the validity of Arnold's presentation of the picture. Sihler acknowledges as much when he says:

The metrics of the Rigveda are still fairly complicated, but most of their mysteries can safely be taken as having been unraveled by the work of Arnold, and any fresh theory of textual emendation must be compared directly with his conclusions.<sup>6</sup>

Without independent confirmation, such a statement amounts to begging the question.

<sup>4</sup> Arnold, *Vedic Metre*, p. 3.

<sup>5</sup> It is instructive to note that a similarly circular analysis of Avestan meter, requiring extensive textual reconstruction, has had wide currency among scholars in the field, but has been completely rejected for the Younger Avesta by W.B. Henning ("The Disintegration of the Avestic Studies", *Transactions of the Philological Society*, 1942, London, 1944, pp. 41ff.), and for the Gathas by Wolfgang Lentz (*Yasna* 28, Akademie der Wissenschaften und der Literatur, Abhandlungen der Geistes- und Sozialwissenschaftlichen Klasse, Jahrgang 1954, Nr. 16, p. 73).

<sup>6</sup> "Word-Initial Semivowel Alternation", pp. 58-59.

3.3.1. In order to investigate the treatment of resonants in the Rigveda on the basis of data which are not tainted by the uncertainties just described, the following procedure has been adopted:

A single book of the Rigveda is selected for intensive analysis. At the start the Saṁhitā text as it stands is adhered to faithfully; then successive modifications in the text are posited as it is demonstrated on the basis of correlations within the Saṁhitā text itself that such modifications are reasonable; finally, a survey is made of forms containing what is written as a postconsonantal prevocalic non-syllabic resonant in order to determine, at least roughly, the probability in each case that the text conceals a syllabic resonant.

3.3.2. It cannot be overemphasized that there is no intent in this study to supersede the work of Grassmann, Oldenberg, or Arnold; in general, the approach adopted here provides further confirmation for those findings on which they all agree. Furthermore, what follows is not presented as a discovery procedure for the analysis of Vedic meter; it cannot be claimed that the same steps would have been followed even without prior knowledge of what to expect.<sup>7</sup> To state the matter baldly, the investigation in this chapter would be superfluous if Edgerton had not made it necessary.

3.3.3. The book selected for study is the Second Maṇḍala of the Rigveda.<sup>8</sup> This was chosen because it is the shortest of the ten books, most of the hymns in it belong to common metrical types, and although there is some dispute over its degree of homogeneity and antiquity, there are only a few hymns in it that are regarded as belonging to the latest stratum of the Rigveda.<sup>9</sup>

3.4.1. The basic units within the Maṇḍala which are indicated in the Saṁhitā text<sup>10</sup> are the hymn (*sūkta*), the stanza (*ṛc*), and the half-stanza (*avasāna*). What proves to be the fundamental metrical unit, the line (*pāda*), is not marked explicitly in the text.

<sup>7</sup> This is not to say that it would not be useful to undertake a thorough analysis of Vedic meter in which one would proceed inductively from the attested text in accordance with a more general theory of metrical analysis. Such an approach has achieved noteworthy results when applied to other poetic literatures, as by John Lotz (see "Metric Typology", in Thomas A. Sebeok, ed., *Style in Language*, Cambridge, Mass., 1960, pp. 135-148, with references to Lotz's earlier work) and Robert Austerlitz (*Ob-Ugric Metrics; the Metrical Structure of Ostyak and Vogul Folk-Poetry*, Folklore Fellows Communications 174, Helsinki, 1958).

<sup>8</sup> The choice of the Second Maṇḍala was made after correspondence with Edgerton himself and with Paul Thieme.

<sup>9</sup> Cf. Edward V. Arnold, "The Second Maṇḍala of the Rigveda", *KZ*, 37 (1900), pp. 429-486.

<sup>10</sup> The text consulted was primarily that edited by Theodor Aufrecht, *Die Hymnen des Rigveda* (Bonn, 1877<sup>2</sup>), with occasional reference to Friedrich Max Müller, ed., *Hymns of the Rig-Veda in the Saṁhitā and Pada Texts* (London and Strassburg, 1877<sup>2</sup>).

3.4.2. Our first step is to group together the stanzas of each metrical type. If we were to restrict ourselves to the Saṃhitā text, we might make a first approximation to such a classification by grouping together hymns in which the average syllable count per half-stanza and the predominant pattern of long and short syllables at the end of each half-stanza were closely similar; such a procedure would be based on the assumption that, with occasional exceptions, most stanzas in a single hymn are of the same type. Rather than go through with this process, we shall take a helpful but non-essential short-cut and rely on the metrical classification of each stanza to be found in that native handbook to the Rīgveda known as the Anukramaṇī.<sup>11</sup> This introduces an element of circularity, since the Anukramaṇī classification presupposes a prior metrical analysis; however, since the results obtainable by a strictly inductive method would differ only in the assignment of a relatively small number of stanzas, the short-cut would seem to be legitimate.

3.4.3. The Anukramaṇī classifies the stanzas of most hymns in Maṇḍala II under one of four headings: *jagati*, *triṣṭubh*, *anuṣṭubh*, and *gāyatrī*. Those stanzas not so classified (2.11.1-20 *virāṭsthānā triṣṭubh*; 2.20.3 *virāḍrūpā*; 2.22.1-4 *aṣṭi* and *atiśakvari*; 2.41.18 *brhatī*; 2.43.2 *atiśakvari* or *aṣṭi*) will be left out of consideration.

3.4.4. In Maṇḍala II there are 141 *jagati* stanzas, 199 *triṣṭubh*, 14 *anuṣṭubh*, and 37 *gāyatrī*.<sup>12</sup> Each stanza is divided in the text into two half-stanzas; in the first three metrical types, the two halves of a stanza are of approximately the same length, but in the *gāyatrī* the first half-stanza is about twice as long as the second.

3.4.5. If we count the number of syllables in each half-stanza of each metrical type, we arrive at the following figures:

	Number of syllables in half-stanza	Number of half-stanzas with given syllable count
<i>Jagati</i>	25	3
	24	108
	23	106
	22	48
	21	11
	20	6
<i>Triṣṭubh</i>	23	6
	22	197
	21	121
	20	56
	19	14
	18	3

<sup>11</sup> In the Aufrecht edition, vol. 2, pp. 471-472 (for Maṇḍala II).

<sup>12</sup> Repeated stanzas are counted only once. Discrepancies between these figures and others cited

<i>Anuṣṭubh</i>	16	15
	15	11
	14	1
	13	1
<i>Gāyatri</i>		
(first half-stanza)	16	19
	15	13
	14	5
(second half-stanza)	8	30
	7	7

3.4.6. In each metrical type there is a direct relation between number of syllables per half-stanza and frequency of occurrence of half-stanzas, the longest half-stanzas being the most frequent. The only exceptions are three 25-syllable *jagati* half-stanzas and six 23-syllable *triṣṭubh*, which are proportionately so rare that they may be left out of consideration as atypical.

3.5.1. Our next step is to demonstrate that the frequency of the longer half-stanzas is even higher than the Saṁhitā text indicates, and the Saṁhitā text accordingly requires emendation.

3.5.2. If we note all cases of sandhi in which the constituents in isolation have one more syllable than the combined forms attested in the text,<sup>13</sup> we arrive at the following tabulation:

- a = attested sandhi form *y* or *v*, derived from word-final *ī* or *ū* respectively, before a vowel
- b = attested diphthong derived from word-final *ā* before *ī* or *ū* or diphthong
- c = attested long vowel derived from coalescence of vowels of same quality
- d = attested *abhinīhita* sandhi

Under each letter is listed the number of occurrences of that type of sandhi in half-stanzas of a given syllable count. Syllable counts are indicated as follows: 0 = the most frequent syllable count for a half-stanza of a particular metrical type; -1 = a count of one less syllable than 0, which is also the second most frequent syllable count, as indicated in the table in § 3.4.5 above; -2 = a count of two less syllables than 0, and the third most frequent syllable count; etc. In parentheses after each syllable count is given the number of half-stanzas occurring with that count.

below are due to the fact that each occurrence of stanzas with partial repetitions is included in this tally, but subsequent counts of half-stanzas or lines do not include duplications.

<sup>13</sup> For the resolution of sandhi the Pada-Pāṭha appearing beside the Saṁhitā in the Aufrecht and Müller texts was relied upon, except that several forms which remain unresolved in the Pada-Pāṭha were also included in the tabulation (*svasti-* = *su-astī-*, *uto* = *uta-u*, *mo* = *mā-u*, *apo* = *apa-u*, *o* = *ā-u*).

	Syllable count	a	b	c	d
<i>Jagatī</i>	0 (108)	1	10	25	1
	-1 (106)	23	10	22	8
	-2 ( 48)	<sup>a</sup> 20	6	<sup>a</sup> 21	8
	-3 ( 11)	9	1	6	1
<i>Triṣṭubh</i>	0 (197)	9	39	39	1
	-1 (121)	46	32	32	7
	-2 ( 56)	31	11	32	1
	-3 ( 14)	14	4	4	1

The statistics for *anuṣṭubh* and *gāyatrī* show similar patterns, but as they are too limited to be of much significance, they may be omitted.

3.5.3. We observe here a sharp increase in relative frequency of occurrence of sandhi of types *a* and *d* as the syllable count decreases. If the Saṁhitā text accurately reflected the original form of the hymns, and cases of sandhi were distributed randomly, we should rather expect the relative frequency of such cases to be approximately the same for each group of half-stanzas, or even to decrease slightly as the syllable-count decreased; this is what we find at least for the most part with cases of sandhi of types *b* and *c*. There would seem to be no reason for sandhi forms of types *a* and *d* to be more common in half-stanzas of lower syllable count unless their presence had something to do with that lower syllable-count. Accordingly we may posit that one way in which a lower syllable count in a half-stanza came about is through elimination of a syllable in a sandhi-form, and that such a half-stanza originally had an additional syllable, which should be restored to the text by resolving the sandhi form into its constituents.

It follows that there are more 24-syllable *jagatī* and 22-syllable *triṣṭubh* half-stanzas (as well as 16-syllable *anuṣṭubh* and 16- and 8-syllable *gāyatrī*) than the Saṁhitā-text presents, since many half-stanzas that appear shorter in the text were also originally of the same length.

3.6.1. Our next task is to show that half-stanzas may be sub-divided into more elementary units. If we examine all *jagatī* half-stanzas which appear in the text with 24 syllables (the characteristic number for *jagatī*, as has just been shown) we find that, with very rare exceptions, a word-boundary occurs immediately after the twelfth syllable, frequently accompanied by a major syntactic break; furthermore, both the five syllables before this boundary and the five syllables at the end of the half-stanza show the same metrical pattern (— ∪ — ∪ ∪), again with only rare exceptions. Correspondingly, 22-syllable *triṣṭubh* half-stanzas can be divided into 11-syllable parts, both ending in the metrical pattern — ∪ — ∪. Although this

<sup>a</sup> These two figures are inflated because of ten repetitions of *sāsy* (*ukthyāḥ*), from *sāh* – *asi* –, in Hymn 2.13.

division into 12- or 11-syllable lines (or *pādas*) is not directly indicated in the text, our conclusion that these lines functioned as the basic metrical units in the composition of the hymns is confirmed by the fact that vocatives and independent verbs, which are normally unaccented except when clause-initial, are accented also at the beginning of a line, even when they are neither at the beginning of a clause nor a half-stanza (e.g. RV. 2.32.1).<sup>14</sup>

3.6.2. When we turn to *anuṣṭubh* and *gāyatrī*, we find it possible to analyze 16-syllable half-stanzas into 8-syllable lines, although here we must rely only on the word-boundary, since alternative metrical patterns are observable,<sup>15</sup> and the sample is too small for conclusive determination. Here again we find justification for this procedure in the occasional occurrence of an accent on normally unaccented words at the beginning of the second line of a half-stanza (e.g. RV. 2.5.1 for *anuṣṭubh* and 2.6.4. for *gāyatrī*).

3.6.3. We shall now return to the conclusion drawn above (§ 3.5.3) that at least many half-stanzas of lower syllable count in the Saṁhitā text should be restored to the normal maximum syllable count by resolution of sandhi and we shall assume by extrapolation that the division of lines established for half-stanzas of maximum count pertains to all half-stanzas. This division will be made at that point roughly in the middle of the half-stanza where a word-ending occurs, preferably coinciding with a syntactic break; usually this can be done unambiguously, and where not, that division which produces the most nearly parallel metrical patterns at the end of each half will be adopted. Resolution of sandhi will be made wherever it is required to permit division into lines.

3.6.4. Having divided the hymns into lines in accordance with the procedure just outlined, we may now tabulate the number of lines showing higher and lower syllable counts for each metrical type. The syllable count is based on the Saṁhitā-text, except for the inclusion of additional syllables deriving from resolutions of sandhi made in the middle of a half-stanza in order to permit division into lines. Repeated lines are counted only once.

<sup>14</sup> Cf. Whitney, *Sanskrit Grammar*, §§ 314, 591ff.

<sup>15</sup> There are occasional 'epic *anuṣṭubh*' and 'trochaic *gāyatrī*' cadences, in addition to the usual iambic ending; cf. Arnold, *Vedic Metre*, § 182.



	Number of syllables in line	Number of lines with given syllable count
<i>Jagati</i>	13	5
	12	365
	11	157
	10	28
	9	6
<i>Triṣṭubh</i>	12	8
	11	549
	10	190
	9	29
	8	4
<i>Gāyatrī</i> and <i>Anuṣṭubh</i>	8	130
	7	34
	6	2

3.7.1. We are now in a position to examine the distribution of prevocalic clusters of consonant plus non-syllabic resonant in the Saṁhitā-text in order to determine the degree of probability that in given cases the resonant should be regarded as syllabic. Four types of clusters will be considered: initial consonant plus resonant, consonant plus resonant after heavy syllable, consonant plus resonant after light syllable, and, as a control, consonant plus non-resonant consonant after heavy syllable.<sup>16</sup> The distribution with respect to lines of given syllable count is as follows:

*V* = vowel

*Ṽ* = short vowel

*Ṙ* = long vowel, diphthong, or *Ṽ* plus either *anusvāra* or *visarga*

*R* = *y, v, r, l, m, n*

*T* = other consonant

*C* = *T* or *R*<sup>17</sup>

/ = initial position

*X* = *Ṙ* or *ṼC*

	Number of syllables in line (with frequency of occurrence)	/ <i>CRV</i>	<i>XCRV</i>	<i>ṘCRV</i>	<i>XCTV</i>
<i>Jagati</i>	12 (365)	43	124	477	61
	11 (157)	40	132	203	31
	10 ( 28)	13	45	28	1
	9 ( 6)	4	12	5	0
<i>Triṣṭubh</i>	11 (549)	50	165	774	86
	10 (190)	37	145	288	31
	9 ( 29)	9	33	39	7
	8 ( 4)	1	7	5	0

<sup>16</sup> The etymological source of these clusters is disregarded at this point.

<sup>17</sup> Clusters of *TR* and *RR* were examined separately for the first four hymns, but since they showed similar distribution, this distinction was abandoned.

<i>Gāyatri</i> and <i>Anuṣṭubh</i>	8 (130)	9	25	126	11
	7 ( 34)	7	28	27	3
	6 ( 2)	2	2	0	1

3.7.2. It will be seen that there is a marked increase in the average frequency per line of */CRV* and *XCRV* as the syllable count decreases, in contrast to the expected distribution found in the control (*XCTV*). By the same reasoning applied in § 3.5.3 to the distribution of certain types of sandhi, we may conclude that many cases of */CRV* and *XCRV* ought to be read with an additional syllable, and in such cases we may regard as syllabic what appears in the text as a non-syllabic resonant.

3.7.3. The distribution of *ǂCRV*, on the other hand, follows closely that of *XCTV*. This indicates that there is no general justification for resolving such clusters into additional syllables.<sup>18</sup> This does not mean that in specific instances such resolution may not be called for, but in order to demonstrate the validity of any such readings a finer technique must be applied than that in use here.

3.7.4. Even by applying the present technique, it can be shown that frequent resolution of *ǂCRV* clusters is called for in two special cases: that where the second vowel has *svarita* accent (*ǂCRǂ*), and that where sandhi of type *a* (see § 3.5.2) is present (*ǂCR-V*). The distribution is as follows (0, -1, -2 are used as in § 3.5.2, except that all metrical types are combined):

Syllable count	<i>ǂCRǂ</i>	<i>ǂCR-V</i> <sup>19</sup>
0	5	7
-1	26	20
-2	6	3

Here we see an increase in average frequency of occurrence per line as the syllable count decreases from normal which is even more striking than for */CRV* and *XCRV*.

3.8.1. Our final task will be to examine each case of */CRV* and *XCRV* individually in order to determine whether there is a significant difference between one lexical item and another in degree of probability that each should be read with a syllabic resonant. An index of likelihood of syllabic resolution in each case can be arrived at by the following procedure:

In any line in which an instance of */CRV* or *XCRV* occurs, we count how many

<sup>18</sup> The contrast between the distribution of */CRV* and *XCRV* on the one hand and *ǂCRV* on the other would seem to confirm Edgerton's thesis; however, it must be remembered that the conditioning factors may be metrical in nature.

<sup>19</sup> There is some overlap: figures for *ǂCR-V* are: 0: 1, -1: 2, -2: 2.

syllables are needed, if any, to bring the line up to normal length; this will be the numerator of the resolution index for this instance. Then we add up the number of occurrences of  $/CRV$ ,  $XCRV$ ,  $\check{V}CR\check{V}$ ,  $\check{V}CR-V$ , and *abhinihita* sandhi in the line, all of which have already been shown to be potentially resolvable into an extra syllable; this will be the denominator of the index. One further modification is made; in the case of the last five syllables of a *jagati* line and the last four of a *triṣṭubh*, an index of 1 is assigned to any potential resolution of the aforementioned types which would produce the normal metrical pattern of the coda, and the index for the rest of the line is revised accordingly. However, where such adjustment of the *jagati* or *triṣṭubh* coda would result in an abnormally long line, it is disregarded.

3.8.2. For any form that occurs more than once, we add the indices for all occurrences (no index for a single instance is assigned a value greater than 1), and compare the total with the number of occurrences. The greater the difference, the less likely it is that this form is to be read in most instances with a syllabic resonant.

It should be emphasized that the precise value of any index number is meaningless, since only a few of many variables have gone into its calculation. A really accurate study of the probabilities of syllabic resolution would take into account relative frequencies of metrical patterns in all parts of the line, place of caesura, likelihood of mixture of metrical types in a hymn, the possibilities of resolution of other types of sandhi as well as other vowels (e.g. genitive plural in *-ām*), etc. However, despite the lack of precision in the present study, a significant picture does emerge in rough outline.

3.8.3. Two types of occurrence of  $XCRV$  may be considered apart from individual forms:  $XC-RV$ , where  $R$  is word-initial, and  $\check{V}CRV = \check{V}-\check{V}CRV$ , where a long vowel preceding the cluster is the result of sandhi of two identical short vowels. The ratio of resolution index to number of occurrences for  $XC-RV$  is 10: 79 and for  $\check{V}CRV = \check{V}-\check{V}CRV$ , 7: 22. In other words, the likelihood of assigning syllabic value to the resonant in most instances of both types is low, although it is higher in the second type. Here, however, we cannot say without further study whether the higher ratio indicates a greater likelihood of reading the resonant as an extra syllable or of resolving the sandhi instead.

3.8.4. The following forms occur at least four times in Maṇḍala II in  $/CRV$  or  $XCRV$  position. Next to each is given the ratio of resolution index to number of occurrences in such position. Fractions are adjusted to the nearest integer, .5 being adjusted upwards.

A. Roots and stems beginning with  $CR-$ .

*jyótis-* 'star'

(including one derivative)

*tri-* 'three'

1 : 7

( <i>trīn, trīni, trī</i> )	1 : 3
compounds and derivatives, including 3 occurrences of the proper name <i>tritá-</i>	1 : 8
<i>tvāṣṭr-</i> , proper name	1 : 5
<i>dyu-</i> 'brilliance, heaven'	
( <i>dyaús, dyám, dyāvā, dyávas, dyúbhis</i> )	2 : 12
compounds and derivatives	0 : 5
<i>dráviṇa(s)-</i> 'property'	
(including derivatives and compounds)	1 : 6
<i>prá</i> 'forward'	3 : 23
in compounds	2 : 30
in derivatives ( <i>pratarám, pratná-, prathamá-, pravát-, prātár</i> )	3 : 16
<i>prāti</i> 'toward'	2 : 9
in compounds (except <i>pratyác-</i> )	0 : 3
<i>pratyác-</i>	1 : 2
<i>bráhmaṇ-</i> 'prayer'	
(including derivatives and compounds)	5 : 40
<i>śru-</i> 'hear'	
forms in <i>-ty-</i> or <i>-sy-</i> ( <i>śravasyá-, śravasyáḥ, śravasyú-, śrútya-, śrútyai</i> )	4 : 7
<i>śrúyáḥ</i>	0 : 1
<i>śruṣṭi-</i>	0 : 5
<i>svâr-</i> 'light, sun'	11 : 11
<i>svá-</i> 'own'	
( <i>sváh, sváyā, svásya, své, svá</i> )	4 : 6
in compounds and derivatives	1 : 4

B. Inflected forms beginning with *CR-*:

second person singular pronoun:

<i>tvám</i>	46 : 64
<i>tvāṁ</i>	7 : 10
<i>tváyā</i>	2 : 6
<i>tvé</i>	4 : 5
<i>tvā</i> (enclitic)	1 : 10
<i>tvá-</i> (in compounds and derivatives)	4 : 4
'to be,' optative first person plural: <i>syāma</i>	6 : 6

## C. Suffixes:

Nominal:

<i>-n-</i> before vowel of ending ( <i>sámn-</i> and 4 other stems)	5 : 7
<i>-y-</i> (from <i>-ī-</i> ) before vowel of ending (e.g. <i>pśnyās</i> , fem. gen. sing. of <i>pśni-</i> ; 11 other stems)	10 : 14
<i>-ya-</i> ( <i>sūrya-</i> and 36 other stems, including gerundives in <i>-ya-, enya-</i> , and <i>-āyya-</i> , but excluding <i>yā-</i> )	52 : 67
<i>-yā-</i> ( <i>vīryā-</i> and 6 other stems)	13 : 15
<i>-ra-</i> ( <i>candrá-</i> and 5 other stems)	0 : 8
Note: The proper name <i>indra-</i> , although not morphologically analyzable, may be cited here in regard to the behavior of its final syllable, which shows the following ratio:	19 : 77
<i>-tra-</i> ( <i>hotrá-</i> and 10 other stems)	3 : 30
<i>-va-</i> <sup>20</sup>	
<i>ūrdhvā-</i>	1 : 4
<i>pūrvā-</i>	1 : 6
<i>ūrvā-</i>	1 : 2
<i>-tva-</i> ( <i>kārtva-</i> and 2 other stems)	4 : 4

<sup>20</sup> Etymologically *pūrvā-* and *ūrvā-* are not of the *XCRV* type, since the *-ūr-* was originally a 'long sonant'.

## Verbal:

-ya- (including -sya-: *śrāmyanti, śvyatu, śvyan, médyantu, and kṣeṣyántaḥ*) 1 : 5

## D. Inflectional endings:

-bhyām (instrumental-dative-ablative dual) 1 : 4

-bhyas (dative-ablative plural) 9 : 21

3.9.1. In general the forms listed above fall neatly into two classes: those showing a high degree of likelihood that the resonant in *XCRV* or */CRV* position has syllabic value, and those showing little such likelihood. The first class includes *svá-* in inflected forms, *svār*, most forms of *tvām* except the enclitic *tvā*, *syāma*, and nominal suffixes -y-, -n-, -ya- (especially -yā-), and -tva-. The second class includes *jyótis-*, *tri*, *tváṣṭṛ-*, *dyu-*, *dráviṇa(s)-*, *prá*, *prāti*, *bráhman-*, *śru-* (except forms in -ty- or -sy-), *tvā* (enclitic), nominal suffixes -ra-, -tra-, and -va-, the verbal suffix -ya-, and the ending -bhyām.<sup>21</sup> The ending -bhyas is a borderline case.

3.9.2. Contrary to Edgerton's expectations, the resonant *r* (< PIE \**r* and \**l*), seems regularly to remain non-syllabic in *XCRV* or */CRV* position, except for some possible cases in the name *índra-*. The other resonants do show syllabic alternants, but only in specific forms; *jyótis-*, *tváṣṭṛ-*, *dyu-*, and the enclitic *tvā* seem in general to exclude syllabic alternants.

3.9.3. Edgerton recognized the aberrance of some of the latter forms from his formulas, and he and others have made attempts to account for them by special explanations.<sup>22</sup> These explanations do not account for the following data, however:

In Maṇḍala II there are 18 stems in all, other than those listed above, which occur at least once in *XCRV* or */CRV* position and which appear in the form *CRVC(C)-* (Theme II in Benveniste's terms),<sup>23</sup> where *R* is *y* or *v*; they are: *cyávana-*, *jyéṣṭha-*, *tvákṣtyas-*, *tveṣá-*, *dvār-*, *dvéṣas-*, *dhvarás-*, *vyácasvat-*, *vyáciṣṭha-*, *vyáthamāna-*, *vyaya-* (in *vyayeyam*), *śyāvā-*, *śyenā-*, *svada-* (in *svadante*), *svápna-*, *svásṛ-*, *svādmán-*, *hvārā-*. None of these occurs more than three times. The ratio of resolution index to occurrences for all of them is 2: 24. These forms therefore show post-consonantal *y* or *v* without syllabic alternants.

3.9.4. We may conclude that only a limited set of forms in postconsonantal resonants have syllabic variants where Edgerton's rules require that they occur. Those who

<sup>21</sup> On the basis of Maṇḍala II alone we cannot classify all of these forms with equal certainty, either because of scanty evidence (as in the case of -bhyām), or because some of the evidence is open to challenge (see footnote 20 to § 3.8.4. on the suffix -va-).

<sup>22</sup> For example Edgerton's discussion of *tváṣṭṛ-* in "Sievers's Law", p. 256, Emeneau's treatment of *jyótis* cited above (§ 1.4.3.2, under *Indo-Iranian*), or Atkins' paper on the aberrant behavior (from Edgerton's point of view) of some forms of *dyu-* (also cited above § 1.4.3.2).

<sup>23</sup> E. Benveniste, *Origines de la formation des noms en indo-européen* (Paris, 1935), Chapter IX "Esquisse d'une théorie de la racine", pp. 147-173. In *Etudes indo-européennes I*, Kurylowicz pointed out the stability of initial clusters in such stems (see § 1.4.4.3 above).

insist on maintaining Edgerton's thesis may explain away the 18 stems listed above by acknowledging with Edgerton that Sievers' law was no longer fully alive in the Rigveda, and accordingly assuming that the law was less in evidence in stems of lower frequency than in the most common words. A different kind of explanation, one that may account for the Indo-European data in general, is offered in the next chapter.

## CONCLUSION

4.1.1. In “The Semivowel phonemes of Indo-European: A reconsideration”, Edgerton states, with reference to the language groups other than Indo-Aryan which have been cited in support of Sievers’ law, “in those extra-Indic languages, except perhaps Iranian, the evidence is chiefly limited to certain definite morphological categories”.<sup>1</sup> It has just been shown in the preceding chapter that if we examine the text of the Rigveda in a way less open to the charge of circularity than Edgerton’s studies, we observe the same limitation of syllabic/non-syllabic resonant alternations to certain lexical items and morphological categories. The object of the present chapter is twofold: first, to point out that these forms are for the most part the same in the Rigveda and in the extra-Indic languages (a view generally accepted before Edgerton’s work appeared); second, to try to account for the alternations in these forms in a tentative but comprehensive way. It should be emphasized that the agreement among the IE languages in the forms showing Sievers’ law alternations, as well as their differences in detail, calls for a comprehensive explanation, regardless of whether or not that attempted here is entirely successful.

4.1.2. The account presented here is based primarily on the suggestion of Kuryłowicz in *L’apophonie en indo-européen* (see § 1.4.4.4 above) that the prevocalic syllabic resonant *ij*, *uy*, *nn*, etc. following the initial consonant in *\*dijéus* ‘heaven’, *\*kuyón* ‘dog’, *\*tinnús* ‘thin’, and similar forms replaced a non-syllabic resonant by analogy with other forms in the inflectional paradigm in which the resonant had syllabic value because it occurred in preconsonantal position (e.g. *\*diuós*, *\*kunós*, *\*tṛuóm*).<sup>2</sup> It is the thesis of this chapter that originally a syllabic resonant following a consonant was normal only in preconsonantal (or prepausal) position, and that all prevocalic syllabic resonants arose either by this kind of analogical extension or by some other secondary development, such as the loss of a laryngeal consonant following a syllabic resonant, which left that resonant in prevocalic position.<sup>3</sup>

<sup>1</sup> *Language*, 38 (1962), p. 352.

<sup>2</sup> Sihler disputes the validity for PIE of the first two reconstructions, but accepts the third (“Proto-Indo-European Post-Consonantal Resonants in Word-Initial Sequences”, §§ 4.33-54, 4.81-86, 4.267a-270); he appeals to the same principle of analogical restructuring that Kuryłowicz does for all three, but assigns the restructuring to individual languages in all but the last form (and several others).

<sup>3</sup> It is likely that the loss of at least some laryngeals between syllabic resonants and vowels, by

4.2.1. If we study the forms showing syllabic readings for prevocalic resonants in the list in § 3.8.4. above (summarized in § 3.9.1), we find that they fall into four groups:

(1) Those which have preserved the hiatus resulting from the loss of a laryngeal (*svār* < \**súHar*, cf. *súra*).<sup>4</sup>

(2) Those which have preserved the hiatus resulting from the addition of a particle beginning in a vowel to a form ending in a syllabic resonant (*-bhyas*,<sup>5</sup> cf. Greek *-phi*; *tvām*<sup>6</sup> < PIE \**tā* + *om*).

(3) Those which show resonants in both prevocalic and preconsonantal positions within an inflectional paradigm, where the syllabic reflex automatically occurred preconsonantly and may have been extended to prevocalic position in the manner indicated by Kuryłowicz. These include:

(a) The nominal suffixes *-y/i-* and *-y/i-*; thus we may infer that gen. sing. *pṛśniyās*<sup>7</sup> developed beside original *pṛśnyās* on the analogy of such forms as nom. sing. *pṛśnis*.

(b) The nominal suffix *-n-* alternating with *-a-* < \**n*; thus gen. sing. *sámanas* < \**sámṇas* beside original *sámnas* after forms like instr. pl. *sámabhis* < \**sámṇbhis*.

(c) The optative first person plural *syāma*, read *siyāma*. Here the full grade of the optative suffix *-yā/i-*, as well as the syllabic *i*, was probably carried over to the plural from the first person sing. *siyām* (the Latin replacement of *siem* by *sim* on the model of *simus* shows the reverse analogy); previously an original *syām* may have been reshaped to *siyām* while zero-grade plural forms like \**sima* still existed.

(4) Forms in which a resonant is followed by a thematic vowel plus inflectional endings (*svá-*, and nominal suffixes *-ya-* and *-tva-*).

4.2.2. If we go beyond the data accumulated within the present study of Maṇḍala II and examine the Rigvedic forms in general to which such scholars as Grassmann,

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establishing a phonemic opposition between syllabic and non-syllabic resonants, set up the conditions for the kind of analogical extension under consideration in this chapter. Since there is no reason to assume that all laryngeals were lost at the same time, these conditions might have already been present at a relatively early date.

<sup>4</sup> This reconstruction accords with that of Eric P. Hamp, pp. 132-133 of "Evidence in Albanian", pp. 123-141 in Winter, *Evidence for Laryngeals*; Kuryłowicz, on the other hand, posits \**sa<sub>22</sub> uel* as the PIE etymon for 'sun', with the Sanskrit forms showing zero grade of the first syllable and with the long *ū* of *sūra-* reflecting the regular preconsonantal development of a sequence *T<sub>2</sub>u* from *TE<sub>2</sub>u* (*L'apophonie*, p. 125).

<sup>5</sup> For a recent discussion of this ending, see James Wilson Poultney, "Some Indo-European morphological alternations", *Language*, 43 (1967), pp. 871-882, especially §§ 1, 16, and 18.

<sup>6</sup> For the spread of the syllabic resonant of *t(u)vām* to other forms of the paradigm, see Sihler, "Proto-Indo-European Post-Consonantal Resonants", §§ 4.90 and 5.2-11; also "Word Initial Semi-vowel Alternation", pp. 67, 76, fn. 25.

<sup>7</sup> Forms given here with prevocalic *-iy-*, *-uv-*, *-an-* are readings posited for forms appearing in the text with *-y-*, *-v-*, *-n-*.



Oldenberg, and Arnold have assigned syllabic resonants,<sup>8</sup> we find that most of them fall into one or another of the four categories outlined in the preceding paragraph, with the addition of category 5, feminine *-yā*-stems (e.g. *rāmyā* 'night', read by Grassmann *rāmiā*).

Furthermore, the evidence adduced from the various Indo-European languages for Sievers' law in its pre-Edgertonian formulation falls largely within the same categories. We can see this clearly when we run through Hermann Hirt's summary of Sievers' law in his *Indogermanische Grammatik*.<sup>9</sup> Here we find the following types of evidence:

(1) Suffix *-iyo/-yo-* (category 4 of this chapter): e.g. Skt. *abhrīyas/avyas*, Gk. *híppios/koinós* < *\*komyós*, Goth. *haírdeis/midjis*.

(2) Suffix *-iyā/-yā-* (category 5, with final syllable in reduced grade): e.g. Gk. *eunēteira/eunētria*, *téktaina/pótnia*.

(3) Suffix *-men-*: e.g. Goth. *wundufni* < *\*umni-/laúhmuni*. This alternation, which involves a sequence of three resonants (*-mny-*) in suffixal function, falls outside the scope of the present study.

(4) Skt. *nu*-class verbs (category 3): e.g. *cinvánti/āpnuvánti*.

(5) Gk. present-stems in *-ánō/-nō* (category 4); e.g. *lambánō/kámnō*.

(6) Osthoff's material on the origin of the linking vowel in the perfect (see § 1.2.5 above). This is not covered by the theory presented in this chapter, but is one of the problems awaiting solution in the re-examination of the Sanskrit evidence called for in § 4.6.

Hirt also cites Hübschmann's Iranian evidence (see § 1.2.2 above), which is for the most part parallel to the Sanskrit material cited in this chapter; Sommer's Baltic evidence (see § 1.3.2 above), which belongs to category 5; and the Latin *-io*-verbs, which are treated below.

4.3.1. If it could be shown that the thematic and *-yā*-stem forms in question (categories 4 and 5) originally behaved in a way comparable to that suggested by Kurylowicz for *\*dijēus*, *\*kuuōn*, *\*tñnūs*, etc., we would have a unified theory dealing with the alternations covered by Sievers' law.

4.3.2. The existence of a class of feminine nominal stems with zero-/full-grade alternation of *-i-* and *-yā-* (< *\*iA/yeA*) is well attested in the Indo-European languages, e.g. Skt. nom. sing. *devī*, gen. sing. *devyās*; oth. nom. sing. *frijōndī*, gen. sing. *frijōndjōs*; etc.<sup>10</sup> Here we have a potential source of leveling, in which the syllabic resonant in the zero-grade nominative may be carried over to the full-grade

<sup>8</sup> Arnold, *Vedic Metre*, §§ 135-139, pp. 83-88. Similar readings appear in Grassmann, *Wörterbuch*, and Oldenberg, *Prolegomena* and *Noten*, passim.

<sup>9</sup> Part 2 (Heidelberg, 1921), § 199, pp. 197-199.

<sup>10</sup> Cf. Brugmann, *Grundriss der vgl. Gr. der indogermanischen Sprachen*, vol. 2, part 1 (Strassburg, 1906<sup>2</sup>, § 134, pp. 211-213.

forms, giving *-iyā-*, which then might go on to replace the original nominative *-i-*, cf. perhaps RV Skt. *kanyā* 'girl', with gen. pl. *kanīnām* from a stem *\*kanī-*. In this way a prevocalic syllabic resonant may have come to characterize many *-yā-*stems.

4.3.3. That a similar process may have been at work in thematic-vowel stems is most clearly seen in the verbs of the Latin *capiō/sāgiō* type. It has been indicated by Streitberg and Meillet (see § 1.3.3.5 above) that the inflection of such verbs in a number of Indo-European languages involved an alternation between thematic *-yo-* and athematic *-i-*. The syllabicity of the resonant in the athematic forms could have been carried over to the thematic forms, converting the latter to *-iyo-*, with prevocalic syllabic resonant.<sup>11</sup>

4.3.4. That some Indo-European nominal *-yo-* stems also showed athematic forms of the suffix in the nominative and accusative singular (*-is* and *-im* respectively) was argued by Streitberg<sup>12</sup> on the basis of Lithuanian, Germanic, and Italic evidence. He believed that just as there was a zero/full-grade alternation in *i-* and *u-*stems (e.g. *\*potis* nom. sing., *\*potois* gen. sing.), so there was an analogous alternation in *yo-*stems (e.g. *\*medhis* 'medius' nom. sing., *\*medhiosjo* gen. sing.).<sup>13</sup> Brugmann, on the other hand, regarded such an alternation for *yo-*stems as improbable, and attributed the forms in question to the mixing of parallel *i-*stem and *yo-*stem forms within a paradigm.<sup>14</sup> Whatever the source, the presence of both syllabic *i* and non-syllabic *y* in the same paradigm might have led to the analogical extension of the syllabic resonant from the athematic forms to those with a thematic vowel.<sup>15</sup>

4.3.5. Thus, at least for some *-yā-* and *-yo-* stems, the conditions for analogical extension of a syllabic resonant from preconsonantal to prevocalic position were present. There is no firm evidence indicating that the zero/full-grade alternation originally characterized all *-yā-* and *-yo-*stems, or that a similar alternation could be found in thematic stems or *-ā-*stems containing other resonants (e. g. *-u/wo-*, *-ū/wā-*). But even if the base for the analogical introduction of a prevocalic syllabic resonant

<sup>11</sup> Kurylowicz, in *The Inflectional Categories of Indo-European* (Heidelberg, 1964), p. 80, insists that 'semi-thematic' inflection is not PIE, but a late phenomenon involving partial replacement of athematic by thematic forms in a language like Latin, which is on the point of losing the remains of athematic inflection in the verb; Sanskrit, although it employs quantitative ablaut in various conjugational paradigms, shows no trace of a *-ya-/i-* inflectional type. This does not affect the argument presented above, since no claim is made that all analogical extension of syllabic resonants goes back to PIE. On the contrary, Kurylowicz's observation may account for the fact that, in contrast to the Latin *-io-*verbs, Sanskrit *-ya-*verbs usually show only non-syllabic *-y-* (cf. § 3.9.1. above).

<sup>12</sup> "Die Abstufung der Nominalsuffixe", *PBB*, 14 (1889), pp. 165-203.

<sup>13</sup> "Die Abstufung der Nominalsuffixe", p. 194.

<sup>14</sup> *Grundriss*, vol. 2, part 1, § 109, p. 183, and § 121, p. 197.

<sup>15</sup> Poultney's account ("Some Indo-European Morphological Alternations", § 10, p. 874) of the development of the nominal *-yo-*stems suggests additional sources for the sequence *-iyo-*, particularly his reference to the derivation of *o-*stem adjectives from adverbs ending in locative *-i-*: e.g. Gk. *anti*: *antios*.

was narrow, once forms in *-iyo-* and *-iyā-* arose beside *-yo-* and *-yā-*, a pattern existed for replacing a non-syllabic with a syllabic resonant in any parallel inflectional form.

4.3.6. Where a prevocalic resonant was not involved in an inflectional paradigm which either was characterized by zero/full-grade alternation or was parallel to a paradigm so characterized, the conditions for analogical extension of the syllabic reflex were absent and the resonant always remained non-syllabic. This accounts for the absence of syllabic resonants in the enclitic *tvā*, in *sva-* when first part of a compound, and in the 18 stems cited in § 3.9.3. It also accounts for one of the most significant pieces of evidence in Sihler's dissertation: the distinction between the disyllabic *\*duwō* 'two' and monosyllabic *\*dwis* 'twice'.<sup>16</sup> The syllabic *u* in *\*duwō* may have arisen by analogical extension from some case form with zero grade before an ending beginning in a consonant; what this was can only be guessed at (perhaps *\*du-* plus some instrumental or dative form in *\*bh-* or *\*m-*?). Since *\*dwis* was uninflected, there was not the same basis for analogical extension of *u* to that form; there was far greater pressure for leveling within the declensional paradigm, which characterized a large proportion of stems in the language, than for inclusion of the relatively isolated word for 'twice' in this process of leveling.

4.4.1. So far Sievers' law has not been mentioned. We may now restate it as follows: In various Indo-European dialects, a prevocalic syllabic resonant lost its syllabicity after certain short syllables ending in a consonant, but not after long syllables. Only prevocalic syllabic resonants were affected, and these, as we have seen, arose in prevocalic position largely by analogical extension. Non-syllabic resonants, regardless of their position, were not involved.

4.4.2. The evidence cited in Chapter 1, to the extent that it is valid,<sup>17</sup> suggests that Sievers' law as just described was not a PIE phenomenon, since its effects do not entirely coincide from language to language. Thus it would seem that Latin, Gothic, and Lithuanian, alone among the IE languages, agree in assigning a special role to a sequence of two short syllables, and yet they differ from one another in the behavior of syllables ending in obstruents and those ending in resonants (see § 1.3.3.5).

<sup>16</sup> Sihler, "Proto-Indo-European Post-Consonantal Resonants", §§ 4.95-4.105.

<sup>17</sup> The reclassification by Nagy (see above, § 1.4.4.4, footnote 120) of much of the data into productive and unproductive morphological categories rather than on a phonological basis cuts the ground out from under the earlier formulations. However, the basis upon which Nagy distinguishes between forms that at a given stage of a language were morphologically motivated and those that were not sometimes seems too subjective to be reliable. His treatment of the Latin *-io-* verbs is particularly unsatisfying; he deals with verbs like *capīō/capīs* in terms of attrition from *VC||iV* to *VCiV* (|| marks a morpheme boundary), but goes no farther in accounting for verbs of the *veniō/venīs* type than to say that they "reflect (perhaps only indirectly) an original *VC||iV* in contrast to *VCiV*" (*Greek dialects*, p. 33).

4.5.1. Although the focus of this study has been Vedic Sanskrit, the Latin *-io*-verbs have intruded at key points (§§ 1.3.3ff., 4.3.3). We may turn to these verbs now as an illustration of the theory of Sievers' law presented here, and within this framework try to reconcile the rival explanations of the Latin *capiō/sāgiō* distinction discussed in Chapter 1 (§ 1.3.3ff.). If we start with an alternation of thematic *\*kapyō*, *\*sāgyō* and athematic *\*kapis*, *\*sāgis*, the forms *\*kapiō*, *sāgiō* may have arisen by analogical extension of the syllabic *i*. Then, at some post-PIE period, Sievers' law operated to cause the loss of syllabicity of the *i* in *\*kapiō* > *\*kapyō* but not in *\*sāgiō*.<sup>18</sup> Now a reverse analogy set in: the fact that both *\*kapyō* and *\*kapis* were disyllabic led to the adjustment of *\*sāgis* to *\*sāgiis* (which became *sāgis*) to agree with trisyllabic *sāgiō*. The *sāgiō*-pattern thereupon merged with that of laryngeal roots like *sciō*, and with the denominative *fīniō*-pattern, where the predesinential long *i* may also be of laryngeal origin.<sup>19</sup> Eventually, of course, with the general vocalization of post-consonantal *y* in Latin (as in *\*alyos* > *alius*, *\*medhyos* > *medius*), *\*kapyō* became the attested *capiō*.<sup>20</sup>

4.5.2. This picture of the development of *capiō*, *capis* and *sāgiō*, *sāgis* takes account both of the view of Streitberg and Meillet that *capis* and *sāgis* are athematic in origin, and of the view of Berneker linking the contrast with Sievers' law.<sup>21</sup> It also agrees with Graur's contention that the *sāgis* form is the innovation. Furthermore, the 'iambic shortening' theory of Skutsch, Exon, and Sommer is not unrelated. Once the form *sāgis* replaced *\*sāgis*, then because of the contrast between *sāgis*, with long initial syllable, and *\*kāpis*, with short initial syllable, a sense developed among speakers of the language that in disyllabic words a long final syllable was correlated with a long initial, and conversely, a short initial should be followed by a short final. Accordingly, the starting point for the spread of iambic shortening in Latin was the *sāgis/cāpis* contrast.

<sup>18</sup> The presence of a preceding resonant seems to have stood in the way of such loss of syllabicity; thus *veniō*, *feriō*, etc. pattern with *sāgiō* rather than *capiō*.

<sup>19</sup> Cf. William Diver, "Palatal Quality and Vocalic Length in Indo-European", *Word*, 15 (1959), pp. 110-122.

<sup>20</sup> This sketch is presented for Latin alone, but at least the earlier stages may have been Proto-Italic, and may have encompassed other branches of IE as well. In Oscan-Umbrian both *\*i* and *\*ī* are attested, sometimes for the same verb, although there is a tendency to generalize the latter (cf. Meillet, *Les dialectes indo-européens*, p. 111).

<sup>21</sup> These two views can also be reconciled along the lines proposed recently by Robert Schmitt-Brandt, *Die Entwicklung des indogermanischen Vokalsystems* (Heidelberg, 1967), p. 74. He posits a reduced vowel *\*e* for PIE, which in the combination *\*i<sub>e</sub>* gives *i* and in *\*e<sub>i</sub>* gives *ī*. Since *\*i<sub>e</sub>* follows a single consonant and *\*e<sub>i</sub>* follows two consonants, *capis* and *sāgis* could be derived regularly from *\*ke<sub>p</sub>-i<sub>e</sub>-s-i* and *\*saHg-e<sub>i</sub>-s-i* respectively. However, placing these developments back in the PIE period makes it more difficult to explain the discrepancies between Latin, Gothic, Lithuanian, and other IE languages alluded to in § 4.4.2 above; the alternative would be to assume that the reduced vowel was retained late into the period of dialectal differentiation, with precisely the same reflex everywhere in the context of *i*.

4.6. To return to Sanskrit: A major function of this work has been to clear the ground for a new evaluation of the Sanskrit resonant alternations described in part by Sievers' law. For instance, the later Sanskrit distribution of *-y-*, *-v-* and *-iy-*, *-uv-* does not always follow consistent patterns (so we find *pātriya-* beside *pātrya-*), but it is still possible to observe some distinction between preceding initial consonant, medial single consonant, and medial consonant cluster as conditioning factors.<sup>22</sup> Similar conditioning factors appear in the contrast in fifth-class present-stems between *su-nv-ānti* and *āp-nuv-ānti* (cited at the end of Chapter 2 above), as well as in the declension of *n*-stem nouns.<sup>23</sup> Then there is the correlation of the presence of the linking vowel in the perfect with the length of the preceding syllable (see § 1.2.5 above). All these require new study to determine the relative chronology of these phenomena and their relation to similar patterns in other Indo-European languages.

Furthermore, not all the distributional evidence in the Rigveda can be accounted for in purely metrical terms. Grassmann, in his *Wörterbuch*, always read *mārtya-* as *mārtia-*, but *sūrya-* as *sūria-* in not much more than half of its occurrences, although both have the same metrical structure. This coincides with the results of the study of Maṇḍala II in the preceding chapter; *mārtya-* shows a ratio of 5: 5, but *sūrya-* 5: 8. Such discrepancies deserve investigation.<sup>24</sup>

It is to be hoped that research on these questions can now proceed without the burden of an obligation to fit it into the framework of a theory that tends to distort rather than clarify the data.

<sup>22</sup> Jakob Wackernagel, *Altindische Grammatik*, vol. 1 (Göttingen, 1896), §§ 179, 180, pp. 197-200.

<sup>23</sup> Cf. Hreinn Benediktsson, "On the inflection of the *n*-Stems", *NTS*, 22 (1968), pp. 7-31, especially pp. 22-23.

<sup>24</sup> The view of Arnold (*Vedic Metre*, p. 105) and Edgerton ("The Indo-European Semivowels", p. 121) that *sūrya-* is a replacement by later editors for earlier *sūra-* fails to come to terms with the question of why the same phenomenon should not have occurred with *mārtya-* and *mārta-*; in both cases only the longer stem survived into the later language.

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